ENGAGING IN EFFECTIVE COMMUNICATIONS IN THE VIRTUAL WORKPLACE: AN ACTION RESEARCH ENQUIRY

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Abstract

Each year hundreds of millions of dollars are invested in corporate communication technologies worldwide in the hopes that this investment will create more productive employees and in turn, an edge in the marketplace. As the workforce moves more and more from the traditional working space to the virtual workplace, it behoves corporations to become mindful in terms of the effects of technologies they wish to invest in and why. Could the lack of engagement or sporadic and insufficient interaction impact the quality and rate of production? Conversely, can the over usage of communication technologies inhibit productivity? If so, how does technology play a role in influencing this phenomenon? This study investigates the efficacy of various types of technologies and their usage in the virtual workplace. Specifically, how frequency and methods of communication via a variety of technological tools impact the quality and quantity of production in asynchronous, non-collocated virtual work teams.

The research design incorporates the case study strategy in examining an educational corporation whose primary, though not sole, purpose is to provide evaluations for constructed responses to prospective students entering university. The theoretical framework for this paper utilises the environment-person fit theory as it applies to the technological milieu and individual relationships to the virtual workplace. Data was collected through an initial set of semi-structured, in-depth interviews utilized to determine how communications can be improved in the virtual teams. This set of interviews was subsequently followed up by three Action Cycles and mini-dialogues to determine the best tools to implement in order to achieve the optimal results in production quality and quantity. The initiation of such an investigation could allow for

continued monitoring of efficacy in both existing technologies as well as integrating new technologies in the future – a process and internal evaluation mechanism that was previously lacking in our corporate milieu.

The study revealed several aspects of the complexities of virtual communications. Overwhelmingly, leadership played a crucial role in the participation and willingness of the virtual team to engage and become proactive, regardless of the technological tools used. The optimal frequency of communication preferred proved to be a bit more elusive to specifically pinpoint, though the main finding here was indicative of purposefulness rather than frequency or a specific number of contacts throughout a shift. Preference of specific tools was found to be across the board as team members preferred those tools that were convenient, less intrusive of their work, and were embedded into the platform rather than those external to our system. These results were reflected in both the quantity and quality of production. As a direct result of this study, specific internal actions were taken and broader industry level recommendations were made accordingly.

And finally, this research opens the door to a whole host of further considerations and future research questions, such as; technical investment, advantages and disadvantages of virtual teams, a cost-benefit analysis of various types of technologies, and the examination of management styles and the usage of technology in corporate educational settings.

Declaration of own work

I confirm that I have read and understood the University's Academic Integrity Policy.

I confirm that I have acted honestly, ethically and professionally in conduct leading to assessment for the programme of study.

I confirm that I have not copied material from another source nor committed plagiarism nor fabricated data when completing the attached piece of work.

I confirm that I have not copied material from another source, nor colluded with any other student in the preparation and production of this work.

I confirm that I have not incorporated into this assignment material that has been submitted by me or any other person in support of a successful application for a degree of this or any other University or degree awarding body.

Dedication

To my mother and greatest supporter,

Judith Ash
1946-2016

Even though you left me too soon, I knew you were always there.

Did I make you proud?

Acknowledgments

My son, Sammy, my greatest motivation.

My Primary Thesis Supervisor, Claes Belfrage, for whom I wish this work reflects the level of excellence you insist upon every day. My Secondary Thesis Supervisor, Sally Sambrook, for whose input and suggestions proved invaluable toward the completion of this thesis.

My professors, may this work embody the invaluable knowledge imparted upon me by you throughout the ages.

My friend and classmate, Ryan Peckham, for your infectious optimism and unwavering perseverance with whom I marched the good ‘March!’

The University of Liverpool faculty, administration, and staff for all that you do. You were all amazing to work with. Thank you for your steadfast support in these trying times.

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Chapter 1

Introduction

The proliferation of the virtual workforce in recent years is undeniable. Initially, it was thought that this phenomenon was an organisational fad and that the traditional workplace containing office cubicles, the proverbial watercooler, and the microwave and mini-fridge lunchroom would stand the test of time. Up until the recent declaration of the COVID-19 pandemic in January of 2020, this was a familiar scene throughout the corporate world. Nevertheless, even at the eve and threshold of the pandemic, we were witnessing an expansion of the virtual workplace in size, number, and scope. In a 2017 Gallop poll, 43% of employed Americans indicated that they have spent some time working remotely. This is an increase of 4 percentage points since 2012 (Gallop, 2017). Furthermore, when asked if they are interested in increasing the number of remote work hours, a staggering 90% expressed the desire to continue working remotely indefinitely throughout the remainder of their careers (Griffis, 2018). According to Global Workplace Analytics, the percentage of companies that offer a remote work option to their employees has increased 40% over the last 5 years and this trend continues globally (Simovic, 2019).

This movement has been celebrated by corporations and workers alike. For corporations, the overhead for labour has been driven down as the costs of the physical plant for employees, liabilities, requirements, and regulations have all but disappeared (Hendricks, 2014). For the employee, the opportunity to make money remotely has increased while the expenses of wardrobes, transportation, possible child/adult care expenses for loved ones have been significantly decreased or eliminated (Owl lab, 2019). The remote workplace also brings a

potential pool of employers and employees to a global market who were previously excluded from participation due to borders or other legal impediments (Morley, Cormican, & Folan, 2015). The scope of potential employees is practically limitless as employees can work from any corner of the globe and likewise, employers can tap into talent from anywhere (Pasini, 2019). Arguably this is a double-edged sword as this can be seen as a windfall in terms of accessibility to affordable high-quality talent (Farrer, 2019). It can also come with potentially negative consequences to the labour market, such as the abuse of freelance work in terms of long hours, low pay, and lack of any stability of benefits for the employee if employee considerations are not made fair and flexible by the employer (Cantarella & Strozzi, 2019). Theoretically, as Johns and Graton (2013) point out, a free market in labour would dictate that this would be mutually beneficial bringing efficiency to the labour market oscillating between the advantages of an employer and the rights and necessities of employees. In other words, ideally, the virtual workplace would presumably behave no differently than the traditional labour market (Cantarella & Strozzi, 2019).

Yet, as is so often the case, with any paradigm shift comes new challenges. According to the State of Remote Work Report 2019, the top three struggles employees face concerning remote work are: 1) 22% of workers reporting the ability to 'unplug' after work, followed by, 2) 19% reporting 'loneliness', and 3) 17% reporting 'collaborating and/or communicating and time management skills' (Owl lab, 2019). Though the first two concerns are challenges that many virtual workers may experience, they tend to centre around overall personality traits and thus remain outside of the scope of this enquiry. However, the third challenge, 'collaborating and/or communicating and time management skills' (Owl lab, 2019) in concert with the subsequent technologies employed to conduct communications with colleagues, remains squarely centred in

the scope of this study as this challenge is prevalent within my organisation and remains a primary concern for me as a leader in my organisation.

Due to the nature of shifting attitudes of workers' expressed desires and the overall changing landscape of the workplace as noted above, several questions relevant to my workplace come to bear. What will these changes mean for established leadership styles? How will the technologies necessary to support distance workers be implemented? These questions directly impact my practice and approach to my colleagues and co-workers as a Leader. As Isabella (1990) astutely points out 'If the interpretational role of managers is to influence the interpretation of others…such a role would vary as a change unfolded' (p.34). I cannot think of a better way to express the evolving role of a leader in terms of technological change. Indeed, becoming more mindful of their concerns as the virtual workplace evolves will provide me with a deeper understanding of what I can do to improve working conditions and thus what can I do to improve production.

The latter question in particular, what I can do to improve production, again strikes a chord with my organisational issue and my leadership role within it. As a leader in an organisation which conducts a great deal of activity in the virtual workplace, I have become concerned that employees may begin to feel disenfranchised and possibly marginalized on the periphery of the organisation. Though one can argue these concepts are inextricably linked, I point this out not for the purposes of addressing personal preferences and individual idiosyncrasies of my team members, but rather to primarily address production, employee participation and appreciation, and how this impacts the organisation. To put this into context, a brief organisational background is in order.

My organisation is a large non-profit focused on educational services. We provide testing for a wide variety of industries, including academia. My particular department provides testing,

development, scoring and assessment for college entrance exams. Prior to the increased usage of technology, the issue of employee isolation was non-existent as scoring essays would take place completely in person. As technology evolved, a hybrid format was adopted by the company whereby the bulk of scoring would take place online and meetings would be held twice per year. The next phase evolved into a fully online operation, only requiring the most senior people to meet twice a year. As the new hires entered the company in recent years and our operations moved to a fully online format, it became apparent that these new employees were not as connected to the organisation as those who have transitioned to the virtual format gradually. For example, the first cohorts to go through these phases have had the face-to-face experience that the newer employees lack. This is important as I have come to know those who work full-time at headquarters very well whereas a new hire has never met our senior personnel and are at best vaguely familiar with our corporate culture.

Perhaps even more noteworthy here is my organisation's lack of systemic checks and feedback loops to examine the question of just how effective technology and communications are and how this impacts productivity. It is here, with this project, I hope to shed some light on these concerns and at least begin the process of putting a system in place that can monitor the impacts of these technological changes. By doing so, this would provide me and my organisation with pertinent information on how to best implement and utilise current and future communication technologies. This would serve to improve the quantity and quality of production now and in the future and thus avoid inefficiencies.

Furthermore, another unusual aspect of this study related to my organisation involves our unique hierarchical composition, or rather lack thereof. All Readers have independent judgement in their rating of student/candidate essays and thus, largely removes authority among the virtual teams assembled for the day. Teams generally consist of one Leader and 10-15 Readers (though

the number of Readers varies due to volumes of essays to score). The leadership role is more of a facilitation role whereby team members report problems. Leaders also serve as primary contacts when technology fails or if emergencies occur. Additionally, Leaders serve as mentors for newer members of the team and mediate discrepant scores among experienced Readers.

It is noteworthy to mention that Leaders in this setting serve as a hub to the virtual Readers and thus the composition of this team more so reflects what The Delphi Group (2021) refers to as a wagon wheel team formation where the Leader represents the hub (contact point and stability of the team) while the Readers represent the spokes which carry the weight of the team on the rim (or periphery). Also, just like the construct of the wagon wheel concept, the spokes in my particular team never touch (or in this case have contact with each other). Nevertheless, they collectively bear the weight of the wagon and are solely responsible for the production of the day. As such, Leaders also set the tone for communications upon their own discretion within the parameters approved of and allowed by the administration. Some Leaders prefer to remain in the backdrop and allow Readers to continue and only contact them if there is an issue. Others are in frequent contact and offer feedback and perform regular check-ins. Since leadership is rotated and participants in teams are regularly changed, there is no standard set for Leader-Reader communications. This unique scenario not only sets this study apart in its originality, but it also may suggest trends for future managerial styles in similar corporate atmospheres where advanced teams collaborate with very little distinction in hierarchical authority. Either way, these two aspects of the study stand out in their novelty in terms of leadership approaches and the findings will certainly aid me and my organisation in terms of how to address this gap in best practices in our virtual workplace.

In addition to gaining a better understanding of my teams and by bringing this issue to light, this study could add to the body of knowledge specifically designed for the practitioner

operating primarily in the virtual world. As Swisher (2012) maintains, any one of three key components indicating a good contribution to the body of knowledge are; 1) adding to a topic where not enough research has previously taken place, 2) providing solid evidence to validate the claims of the new research, or 3) contributing good theoretical development that is applicable and relevant to the question and topic at hand. With the findings of this research given the uniqueness of the organisational structure, the solid evidence and recommendations gleaned from highly experienced professionals working in the field, and the application of appropriate theoretical foundations applied to this study, corporations can begin to examine their new role in committing to maintaining open communications in their own virtual workplaces. Likewise, those in leadership roles can aspire to utilize best practices in communications to encourage optimal production outcomes in the emerging virtual corporate milieus.

Aside from my academic interest in business communications and the desire to contribute to said body of knowledge, I have a long-standing professional background in working online and improving my own best practices as an online professional. Whether in this role or any other future roles I pursue, improving my own virtual practice is imperative in advancing my career and moving forward. This is particularly important for me and those higher-level practitioners that work in what Alvesson (2004) refers to as being engaged in knowledge-intensive work at knowledge-intensive firms (i.e. highly technical, advanced, and complex work seated in complex systems). Specifically in my case, transferring complex concepts such as translating the qualitative into the quantitative via rubric scoring – a task which arguably is philosophically and psychometrically challenging in its own right while communicating via technological means – qualifies as both knowledge-intensive work in a knowledge-intensive firm. Investigating how to engage in more effective communications in the virtual workplace will not only improve my

practice but also assist the broader community of practitioners as this shift to remote workplaces continues to expand and become the norm.

And lastly, it should be noted this research project has its origins before the start of the global coronavirus pandemic. The timeline of the research has data collection and subsequent action research portions of the project occurring just before the pandemic took a grip on international business operations, much of which went fully online. As a consequence of this timeline, several points are notable. First, at the beginning of this project, the vast majority of corporate operations worldwide were still being performed in person, generally in physical offices (Gallop, 2017). It was my intention to bring to light the best practices of the virtual workplace in the context of the slow evolution of the virtual workplace. I never expected this topic to become such an instant phenomenon throughout the global business world as COVID-19 sent millions to work from home with the potential to permanently impact corporate culture (Liang, 2020). Second, as a result of this stunning development, it is my hope that the findings of this research in its timely occurrence, benefit communities well beyond the confines of online education and academic workplaces. The information garnered from this research could very well aid larger corporations as well as the many small, independent online businesses that we may begin to see grow during this challenging time in organisational adaptation involving the virtual format.

In light of the ever-changing virtual workplace milieu and the recent emergency worldwide switch to virtual workplace environments outlined above in conjunction with the specific informational needs of my own organisation, this thesis seeks to investigate the efficacy of various types of technologies and their usage in the virtual workplace. Specifically, how frequency and methods of communication via a variety of technological tools impact the quality and quantity of production in asynchronous, non-collocated virtual work teams.

This thesis is organized as follows: Chapter 2 Literature Review provides a brief review of the literature providing an overview of the state of the virtual workplace as it stands across several academic fields of study. This chapter also reveals how I came to envision this study by identifying gaps in the literature and where this study fits into the current body of knowledge. Included in this chapter are discussions addressing relevant debates, my rationale for focusing on certain fields of literature and not others, which authors and researchers were most influential in the formation of this thesis, and why I chose to focus on particular writers and discipline-specific influences.

Chapter 3 Methodology discusses the problematizing process, epistemological underpinnings, the research design, ethical considerations, and limitations of the project. Here, I address which research methodology and methods of enquiry best fit the research question in order to address the organisational problem at hand.

Chapter 4 Data Analysis and Findings includes a discussion of the interview sample, an explanation of the templates, the data set, the coding process employed, and an evaluation of the outcomes from said interviews.

Chapter 5 Story of Cycles of Action, Reflection, and Sensemaking discusses the implementation of action research throughout this research project. I describe what I did, what happened when I did it, and what was found as a result. This chapter takes a more personal reflective tone as I employ Action Learning in gleaning actionable knowledge specific to my own organisation and approach to leadership styles and how this has been impacted.

And finally, Chapter 6 Reflections, Recommendations, Implications, and Conclusion lays out many takeaways, including recommendations and decisive actions taken as a result of this research project. In retrospection, I reflect upon what I could have done differently and how interactions with my colleagues evolved throughout the project. These observations include

notable mentions from journaling about the process throughout the project. In the following chapter, Chapter 2 – Literature Review, I delve into the content of the subject matter at the heart of this thesis, communications in the virtual workplace, and provide an overview of the highlights throughout the literature. Specifically, this includes technology, social interactions, and communications relative to the virtual workplace and as a result, I map out the path of how my in-depth interview questions were informed.

Note to the Reviewers: The positions in my organisation being addressed hold the title of "Leader" and "Reader". These positions/titles are discussed and referred to throughout this thesis. In order to avoid confusion, Leader (capitalised) refers to the position in my organisation whereas "leader" lower case refers to a leader in general or – one who is in a position of leadership. Likewise, Reader (capitalised) refers to the position in my organisation and "reader" lower-case refers to a reader of this piece or a reader in general – one who reads.

Chapter 2

Literature Review

According to Levy and Ellis (2006) ‘research must enhance the scientific community’s current understanding of a phenomenon, or contribute to enhance the body of knowledge, and research must communicate what was discovered in the new study to the scientific community’ (pg. 183). In the context of the scholar practitioner, literature reviews serve a particularly practical purpose. By providing reference material for the consumer of practical knowledge, the scholar practitioner saves costs in time and money (Baker, 2000). Therefore, this literature review not only serves to inform the reader of the prior research done on this chosen topic, but also welcomes the reader to explore the practical literature presented for their own benefit.

While working remotely is hardly a new concept, as we could witness this in the traditional forms of the sales profession as seen in real estate or even in correspondence courses at the very beginning of distance learning, due to the implementation of communication technologies the virtual workplace, the virtual workplace holds a special place in remote work and can take on a variety of forms and definitions depending upon the scholarly context. For instance, Huang, Kahai, and Jestice (2010) posit a more social notion that virtual teams not only span the obvious commonalities, such as the usage of shared technologies, but also can encompass diverse cultures. This plays into the idea of cultural considerations we well as location. Lipnack and Stamps (2000) define the virtual workplace as a group of two or more individuals compiling virtual teams that utilize virtual communication tools and are not located in the same time or space. Adding to this, Laitinen and Valo (2018) add a technological component to their definition and consider virtual workplace as a venue where virtual teams have significant technology-related interaction; video or otherwise.

Though many other definitions can be applied, for the purposes of this study, the virtual workplace and the virtual teams defined above will be used. In addition to this, however, I would also add a caveat concerning the participants in that the composition of said teams can exist without the necessity of a hierarchy and rotated leadership can occur regularly, thus the wagon wheel composition discussed earlier in Chapter 1 where Leaders are at the centre and stabilize the periphery of team members and as such no contact exists between members (The Delphi Group, 2021). This is necessary considering the unique composition of the virtual teams I am interviewing in this study as Leaders' perspectives are much more all-encompassing as all interaction takes place through them in the team dynamic. Therefore, for the purposes of this study, the virtual workplace referenced in this case study within my organisation consists of a non-collocated team of two or more diverse individuals engaged in a variety of technologically based communication the interaction of which will be chosen by the Leader of that particular shift. As organisational structure often plays a role in and influences leadership techniques (Rost, 1991), this is important to mention. This is also relevant here given the narrow description of the teams I work with, the literature for such a specific workplace milieu as a single coherent piece is non-existent to the best of my knowledge and, therefore I must rely on the literature on the periphery of this description.

Given the two very important and arguably essential points above, another challenging aspect of compiling this literature review lies in its interdisciplinary nature. The mere fact that for practically every field of study in existence, each respective group of scholars and experts claim it is their field that influences the efficacy of virtual technologies in the workplace making this a complex and potentially all-encompassing review. For instance, those specializing in technology will lean on the composition of the technological components implemented in the workplace. Those specializing in leadership will claim the leadership skills in managing their

teams carry the most influence as to whether virtual communications are effective (Dennis, Meola, & Hall, 2013; Shuffler et al, 2010; DeRose, 2009) and so on. Therefore, not only does reviewing relevant literature with a narrow definition of the types of virtual teams I work with limit my selection but also the plethora of explanations and academic assertions pose a great challenge.

Another challenge concerning the compilation of this literature review is that the literature review is for the purposes of a case study. I suspect due to the nature of a case study, where the structure of the entity in question is unique in nature (Yin, 1994), literature addressing very similar fine points is unlikely to exist. Likewise, along with the fundamentals of the DBA Program and action research where an organisation specific problem is posed presents a particular set of challenges in compiling a comprehensive and informed literature review as the said exact topic may be thin or non-applicable for a variety of reasons. These reasons may include the research being composed of different organisational structures, originating from inapplicable types of work performed, and a whole host of other reasons existing literature may be similar in topic but not lend any value to the project (Onwuegbuzie, Leech, & Collins, 2012).

Perhaps this challenge is occurring in virtual workplace literature first due to the relative age and wide implementation of virtual communities and the nature of technologies as a whole. After all, virtual workplaces are only in existence, depending on your definition, for approximately 20 years while sociology, linguistics, and management and leadership studies have existed in many cases for over a century and perhaps for millennia if you wish to consider the philosophy and epistemology influencing each (Chaffee & Lieberman, 2001). Also, practically every type of industry can engage in some sort of virtual workplace set up and as a result, every industry can have a variety of outcomes and experiences with each approach and solution suggested (Chaffee & Lieberman, 2001). In essence, as each of these academic and

practical fields vies for providing the gold standard explanation and solution to improving virtual communications in the workplace, who are organisations and practitioners to believe (Onwuegbuzie, Leech, & Collins, 2012)? Is it their leadership skills that would improve outcomes? Should they implement new technologies? Perhaps they should invest in leadership training to accommodate the new virtual milieu?

In order to ameliorate the challenges outlined above this literature review explores the dominating discussions throughout the literature, namely, the subtopics of technologies, social milieu, and leadership. These categories were determined throughout my studies within the DBA program. Being this literature review is being compiled for the purposes of a DBA, the review is not meant to be a comprehensive overview of the literature but rather is meant to provide an overview of key contemporary literature and classic pieces in the field and offer critiques of the literature particularly in reference to my own research. It should be noted that any and all literature referencing my research approach, rationale, philosophical viewpoints was included in Chapter 2 – Methodology as well as throughout the thesis where data analysis and action research was conducted (Chapters 4 and 5 respectively) as a matter of convenience to the reader.

As I had continued to search for answers to my specific program questions and assignment, I had noticed a pattern. Indeed, these three subtopics dominated the literature. This would be true throughout all of the databases I would consult, including but not limited to; A-list scholarly and peer-reviewed journals; discipline specific journals relevant to the topic, such as *Information and Software Technology*, general academic business journals, such as *Organizational Studies*; and research based organisations and their subsequent publications, such as Gallop. Outside of these more typically academic sources mined from a variety of the University of Liverpool's journal databases, you will see throughout this thesis references from more practitioner focused publications. These were found through regular internet searches using

Google employing key word searches where they were necessary and include pieces from publications such as US News and Forbes. References of these pieces are found throughout the thesis as they provide practical experiential input and relevant and comparable statistics.

The question of appropriate usage of technologies and types and purposes of said technologies of communications in my virtual workplace among asynchronous, non-collocated teams will be explored through a variety of lenses throughout academia and the publications of scholar practitioners across these various disciplines. This literature review concludes with a summary of the review relating it to my specific problem and responds to the specific questions posed in University of Liverpool handbook concerning the Literature Review section, such as, why I chose as a result of this review to take the avenue of research I have chosen, as well as identifying gaps in the literature which warrant further research and discussion (UoL, 2017).

2.1 The Literature Review

This section of the Literature Review addresses three distinct subcategories of communications the virtual workplace, technologies, social interaction, and leadership. The characteristics of the pieces vary depending upon their influence and importance within the topic of communications in the virtual workplace in relation to efficacy and productivity. As mentioned above, this is relatively a new field of study. As a result, some pieces may be older than others but were chosen as they are recognized as classic pieces in the overarching body of knowledge. Others are more contemporary, especially in the event of the pandemic, as we see more publications addressing virtual teams entering the workforce.

2.1.1 Technologies and the Virtual Workplace

In the virtual workplace, technologies and their utilization have an enormous impact on the efficacy of communications. The first major study to examine this aspect was conducted by Malhotra and Majchrzak (2005) as they raised the point concerning the need for consideration of context and alternative workspaces when considering virtual teams and production. They argue that 'media richness' (or a wide range of technological tools) would provide much-needed variety and freedom for individual workers to utilize said tools per their own technical skills and preferences (Malhotra & Majchrzak, 2005). Beyond considering variety, other scholars considered efficacy and ease of use as a point to consider in terms of effective communications (Blaise, Bergiel, & Balsmeier, 2008). Indeed, if those using the technology found it cumbersome or were ill-prepared to engage in the technologies at hand, communications would be negatively impacted regardless of the amount of technological options provided.

For instance, when referencing textual technologies, such as emails, Barley, Meyerson, and Grodal (2011) found when emails are overutilised they can quickly become a source of stress for employees as they both challenge priorities and add to workloads. One US based company, Van Meter, has attempted to forego emails altogether while citing inefficiency and in doing so they claim to have reduced both downtime and labour costs (Nelson, 2020). While they note emails cannot be completely eliminated, they also found that their employees were less stressed and more productive in the long run (Nelson, 2020).

Gheni et al (2016) go so far as to argue that even in highly technical fields, training and support are critical to production and efficiency in virtual work teams. Liao (2017) takes this notion further and emphasizes the importance of technical support. Here, he also suggests that this goes beyond support services and falls squarely on the onus of team leadership. In addition to the variety and training available, the ever-changing nature of communication technologies

prompted others to consider when changes in technology should take place to produce optimal outcomes. For example, Thomas and Bostrom (2010) map out several triggers or indicators which might signal it is time to change technology. They argue it is imperative to consider how existing technology can be adapted to become more efficient and accommodating and prompt users to consider the type of project and match the technology up appropriately (Thomas & Bostrom, 2010). Here, they emphasize the technology being at the centre of the issue rather than the social contexts of communications and interactions (Thomas & Bostrom, 2010). Lehman and DuFrene (2016) break this notion down specifically into assigning individual technologies specific tasks and uses for the team. Here, they argue purposeful technologies with pointed and intended usage is a main key to ensuring efficacy and efficiency. Along a similar line of thinking in terms of technology, Liao (2017) not only emphasizes the importance of the types of technologies, but also the team members' perception of the leader's ability to properly use the technology at hand as a determinant of its success.

This is in direct opposition to Hyrkkänen, Nenonen, and Axtell's (2016) attempted to address this technological utility by exploring workplace and personal fit to technology. Here, the intriguing contrast lies in whether the technology should fit the project or be more compatible with the user. Alsharo, Gregg, and Ramirez (2017), and later on Brodsky (2020), all emphasize this assertion when they argue that the utilisation of technological richness has its advantages in that this allows for authenticity of the users to transcend distance and enable trust and credibility to develop. These perspectives are particularly important from a leadership or managerial perspective as one approach focuses on leadership to determine the primary usages of technology while the opposing school of thought relies upon how the individual team member feels about implementing particular technologies at their discretion.

Another approach to consider relies entirely upon personal preference and frequency of use. Cordery et al (2009) found that individuals tend to lose their singular identity and thus the technology itself becomes responsible for hampering communications if over utilized. Indeed, an argument can be made if leadership cannot establish effective communications, as implied here, then the capabilities of virtual workers can diminish greatly. The selection of proper technologies then becomes the key to maintaining not only sufficient communications, but also provides for an individual or team to adhere to benchmarks and goals (Cordery et al, 2009). Another take on this can be observed in the work of Shen, Lyytinen, and Yoo (2014) and their emphasis on the collaborative abilities of those involved in the virtual work. Hence, individuality vs. teamwork and the level of leadership interaction are juxtaposed in these competing findings. One could argue that a balance of both of these concepts could largely impact efficacy in the virtual workplace. Rezgui (2007) does just that as he explores the effectiveness of virtual teams in industry specific venues and regardless of industry finds that collaborative abilities should be a priority.

Here, technology certainly has a significant place in communications in the virtual workplace which could heavily impact production. Shuffler et al (2010) caution us to consider varying degrees of talent amongst teammates and how technological usage can impact efficiency in this scenario. This is well taken into consideration with Brodsky's (2020) argument that media richness and diversity can allow for trust and authenticity to be felt at a distance. Again, this particular argument is germane to the research question at hand. Regardless of whether the workload itself is taxing or the capability of the team members is lacking the usage of technology has the potential to determine efficiency.

Fruchter, Bosch-Sijtsema, and Ruohomaki (2010) addressed the composition of virtual teams and the limitations of effectiveness in team workloads. They maintain that high

expectations and work overload can occur due to the distance involved (Fruchter, Bosch-Sijtsema, & Ruohomaki, 2010). They argue, regardless of how advanced the technology can be, productivity might be decreased due to constant readjustments in technological usage, including frequency of communications (Fruchter, Bosch-Sijtsema, & Ruohomaki, 2010). Hirsch (2019) promotes this point even further when considering high-performance distance work. She argues that the greatest challenge to communications in the virtual workplace is overcoming distance between team members. Again, the frequency of communications is promoted (Hirsch, 2019). She makes the point that frequency in communications will ultimately establish trust and an overall camaraderie and thus diminish the deleterious impact distance could have on relationship building in the virtual workplace (Hirsch, 2019).

Rice, et al (2007) in their classic research were among the first to promote establishing team processes as an indicator of virtual workplace success. They also acknowledge the challenges of distance and establishing a connection of mutual trust and high-level interaction (Rice et al, 2007, Brodsky, 2020). Here, synchronous versus asynchronous communications is particularly important to the success of virtual communications. For example, taking into consideration the urgency and depth to which communication needs to take place can be impacted by the technologies that are available. Panteli, Yalabik, and Rapti (2019) the proper type of engagement is imperative to maintain proper communications, particularly when asynchronous teams are across geographic and time zone boundaries.

This is relevant to my workplace milieu as the geographic disbursement of my team members is vast and the issue of distance and trust, particularly related to the background of my organisation and its decision to eliminate in-person meeting, is at the forefront of this research. As we integrate more technology into our communications, we run the risk of This portion of the literature strongly supports my instincts to investigate frequency of communications since many

scholars agree in theory, but there is little produced in the way of empirical evidence to suggest this notion of the frequency in communications, or at minimum, a communication process having been successfully put to the test, particularly in a virtual workplace milieu such as mine.

2.1.2 Social Milieu and the Virtual Workplace

Moving on from the more technical literature on virtual team communications, other scholars have chosen to focus on the social milieu and composition of the teams and how this might play a role in virtual communications. Researchers place emphasis on interactions between the participants in the environment. Boule (2008) notes 'experimentation should be the rule, not the exception' (p.28). Here, he encourages future investigations of technological implementation, not just installing the new technology and neglecting observing future outcomes. In other words, continuing to communicate about the means and state of communications is emphasized here. This is supported by Nagdeman (2018) as this feedback loop is emphasized as a direct link to training and professional development, another key element of consideration in a technical milieu. This is particularly of interest since this project involves action research and introducing the importance of beginning to install a future feedback loop in my organisation for just this purpose. In conjunction with the idea of keeping a continuous check on the actual organisational structure itself, a key to successful virtual workplace environments includes must include available support and training (Germain & McGuire, 2014). Unlike the notion of training mentioned earlier, Germain and McGuire's (2014) point considers those with differing and divergent skill sets in a team. In other words, they advocate ensuring the team members are kept up to par with each other as well as within their roles and realms of responsibility (Germain & McGuire, 2014). Arguably, this aspect could have an impact on performance, particularly if colleagues are required to interact as this may have an influence on participation.

Wang et al (2010) maintained perhaps one of the most unique approaches to how social interactions play a role in communications in the virtual world. Specifically, they focused on linguistics. They observed that clear and complete expression is key for solid communications in the virtual work place, perhaps more so than anywhere else in an organisation (Wang et al. 2010). This is primarily due to the lack of face-to-face interaction and the advantage of facial expressions and body language we otherwise would experience (Wang et al, 2010). Pearlson, Saunders, and Galletta (2016) emphasize this concern and consider it a challenge to virtual workplaces where they view the lack of face to face communication as a potential impediment to meaningful communications and social interactions. This point is echoed by Hacker et al (2019) as they emphasize that face to face technologies have an advantage in that ability to see communication dynamics such as facial expressions and gestures and thus this ability adds to potentially improved social interaction between virtual participants (Hacker et al, 2019). This is particularly helpful as the variety of communication technologies this project has is a mix of written, verbal, and face to face components. Keeping this argument in mind is certainly helpful in conducting this study not only in practice, but also in conducting interviews as Miller, Gayfer, and Powell (2018) also emphasize the importance of verbal cues on the weight of one's expression.

Another aspect of the social milieu is the frequency of interaction and how that is established. Golden (2015) argues employees are much more productive and at ease if they are clear on their scheduling, both shift to shift as well as what is expected in that shift. Communications and scheduling resonate here in my own organisation as scheduling is generally unpredictable and never guaranteed. Likewise, who you will work with and when you will work with them is always unknown. Gold (2020) refers to this as establishing "defined norms" of interaction as a key to growth and productivity.

2.1.3 Leadership and the Virtual Workplace

On that note, one could not expect to address communications issues within an organisation without considering leadership. Shuffler et al (2010) note that 'While the sharing of leadership has proven to be advantageous to more traditional forms of vertical leadership, there is a dearth of research concerning how shared leadership operates in, and is influenced by, virtual and distributed environments'(p.3). As a result, Shuffler et al (2010) take an interview and self-reporting approach to delve into the question as to how leaders could manage distributed environments –teams where the talent pool is mixed. In opposition to this point, Dennis, Meola, and Hall (2013) conclude that it is in fact the characteristics of the leader and not the organisational structure or composition of the teams themselves that is the primary indicator of successful communications. Nevertheless, Eisenberg, Post, and DiTomaso (2019) caution that as dispersion of virtual team members increases, the impact leadership has on the team as a whole decreases. They have found this to be the case as distance may create disaffected leaders (Eisenberg, Post, and DiTomaso, 2019). While certainly this is a worthy avenue to take in terms of potential future research, I would argue that equally distributed teams in terms of the level of education and experience would present a more challenging environment, there is something to be said concerning leadership abilities and approach in relation to distance and the challenges of virtual workplaces. Along that vein, I concur with McKelvey, (2006) when he makes the point that when teams are compiled of equally standing individuals, the likelihood of clashes might become more likely. This in turn might lead to a consideration of corporate culture and whether such intellectual and practical challenges are tolerated (McKelvey, 2006).

Kerfoot's (2010) approach to leadership sheds particular light on the role of leadership presence when utilizing virtual tools. The concern is not the number of tools utilized, but rather the leadership interaction in frequency and duration. Accompanying this idea is the concern of

leadership communications also acting as a two-way street suggesting leadership must also be open to listening to employees under their charge (Kerfoot, 2010). Malhotra, Majchrzak, and Rosen (2007) take this idea further to including very specific responsibilities which leadership must carry out in order to have meaningful communications within virtual teams. Leenders Engelen, & Kratzer (2003) took this a step further and considered relationships outside of the team yet came to the same conclusion about diversity and trust. Establishing trust, encouraging diversity of thought, and managing team progress are all necessary responsibilities leadership must undertake to enhance and continue communications, among others. Cummings and Teng (2003) examined this at the international collaborative level and also concur that trust is a large part of success in building virtual teams, especially across borders. Here, intrinsic rewards are key, such as recognition of accomplishments increasing team and individual contributions (Malhotra, Majchrzak, & Rosen, 2007).

The direction of communication via technologies also plays a role in its impact on leadership, interaction, and productivity. Muganda and Pillay (2013) place emphasis upon technology's ability to aid in establishing trust in leadership through the ability of the technology itself to allow adequate participation. They argue effective leaders emphasize regular and active participation via available technology (Muganda & Pillay, 2013). This, in turn, reduces any power structure issues, or asymmetries, created within the technology by default. I do see elements of truth in this in my organisation. Scoring reports, routine chats letting individuals (and scorers as a team) know how they are progressing are all important elements in our communications throughout the day. I would have liked more elaboration on the amount of interaction necessary to achieve the optimal balance. Again, if not careful here, one could be engaging in what could be perceived to be micromanagement with again has its own power asymmetry issues (Alvesson & Sveningsson, 2003). Having said that, it is also possible that

communications would be more robust and frequent which could also be beneficial. This distinction is lacking in the literature concerning leadership roles and the virtual workplace.

Another group of scholars, rather than focusing on the individual as previously noted, focus on team performance enhancement in virtual teams. DeRosa (2009) emphasizes leaders should especially be aware of the diversity dynamics within their team. These dynamics include cultural differences, equal training, and participation. Though I can agree with DeRosa (2009) that these are all qualities necessary for leadership in the virtual workplace, I would argue that they do not distinguish characteristics leaders in any other realm would have to aspire to achieve.

Watkins (2013) argues the importance of technology lending itself to create a one-on-one atmosphere whereby coaching can take place, such as face to face interaction. This is in contrast to technology which lends itself to open group participation. Though this type of technology (or usage of such capabilities) allows for collaboration, but less opportunity for personal interaction with leadership. Pullan (2016) takes this notion a bit further when suggesting that leaders in the virtual workplace take a proactive role in mentoring, keeping track of accomplishments as morale boosters, but most importantly, valuing your team, both individually and as a unit. Shuffler et al (2010) in a unique piece addressing the specific concerns of shared leadership as they argue this poses a challenge as individual leaders indeed maintain their own style yet in this particular instance, they must find a way to share this platform. Hertel, Geister, & Konradt (2005) take this even a step further and consider when virtual projects have a particular finite timeline, leaders also have to derive a balance in an ever-changing environment. They maintain that each project has a life cycle of its own and must adapt throughout the progression of each project rather than through individual necessities (Hertel, Geister, & Konradt, 2005). Their view maintains that this goes beyond immediate leadership and into the field of human resource management as a way to maintain efficiency (Hertel, Geister, & Konradt, 2005). These are

certainly worthy questions and arguments, though I would respond to these notions by trying to determine the distinction between these actions in the virtual work place and other environments that call for these particular considerations. Furthermore, though shared leadership is a more similar situation to my own organisation's environment, it differs from rotated leadership in that only one person, albeit for that particular shift only, chooses the style, technology, and implementation for the day. I would argue this is a very different scenario that deserves special consideration.

And finally, Siebdrat, Hogel and Ernst (2009) introduce the idea of efficacy in communications through holding hybrid communications and interactions. In essence, blending face-to-face meetings with the online approach. Their results yield a finding of higher performance when face-to-face interactions were part of the equation. This is particularly telling as my organisation had cancelled these meetings. We have since gone completely virtual and this was the beginning of communications issues. Nevertheless, this paper does not address how to solve this issue strictly using virtual technology.

2.1.4 Theoretical Framework

Beyond the considerations of methodologies to implement, another vital portion of the literature involves the incorporation and review of a theoretical framework. Kivunja (2018) defines a theoretical framework as

'a structure that summarizes concepts and theories, which you develop from previously tested and published knowledge which you synthesize to help you have a theoretical background, or basis for your data analysis and interpretation of the meaning contained in your research data' (p.46).

He goes on to describe the framework as

‘a synthesis of the thoughts of giants in your field of research, as they relate to your proposed research or thesis, as you understand those theories, and how you will use those theories to understand your data’ (p.46).

This being the case and in an attempt to ascertain how to best go about constructing a theoretical framework for my research design, I was fortunate to come across Hyrkkänen, Nenonen, and Axtell’s (2016) article in their attempted to compile a workplace fit/misfit assessment tool for the virtual workplace. In their case study of a virtual workplace, they applied Lewin’s (1946) apothegm that behaviour is a function of the person and their environment, or B = f(P, E) (Hyrkkänen, Nenonen, & Axtell’s, 2016). In doing so, they applied categories proposed by Diller, Shedroff, and Rhea (2005) in an attempt to determine what factors influence a good fit for virtual workplaces (Hyrkkänen, Nenonen, & Axtell, 2016). These categories include; Frequency, Atmosphere, Familiarity, Functionality, Narrative, and Meaning and in doing so they could assess the environment-person fit in the field of worker-workspace relationship (Hyrkkänen, Nenonen, & Axtell, 2016).

Their framework had been the closest to my idea in terms of approaching this research question and would serve as the inspiration and formation of my interview questions/categories and template for analysis. Of course, though I rely heavily upon their framework and approach as a whole, my study differs in two significant aspects. Firstly, I have augmented my interview questions toward the particular research question relevant to my workplace milieu. In doing so, some topics and subtopics contained within their template were altered or completely discounting others, while others were added to better suit my research question (Knight, 2013). For example, Diller, Shedroff, and Rhea (2005) include psychosocial aspects and considerations in their workplace fit. Though this is certainly a potential issue to explore, as mentioned earlier in the introductory chapter of this thesis, topics and concerns such as reported ‘loneliness’ or

'inability to unplug' after disengaging from virtual work (Owl lab, 2019), or any other individual idiosyncrasy or psychological elements, such as cognition, remain outside of the scope of this research. Again, I will reiterate that since this is a study based upon the aggregate in terms of accuracy and production, examining such specific idiosyncrasies and applying their specific findings, though potentially useful in a separate study, would cloud the main focus here. Nevertheless, I have found other categories Diller, Shedroff, and Rhea (2005) include to be very relevant to my investigation into effective communications, such as their inclusion of functionality, familiarity, and the virtual atmosphere.

Secondly, another difference is the inclusion of production as an indicator of efficacy in communications. In other words, quality and quantity of production are also part of the framework in determining efficacy. One could argue by replacing the psychosocial element included by Diller, Shedroff, and Rhea's (2005) framework and in Hyrkkyanen, Nenonen, and Aztel's (2016) pilot study with a quantitative production element makes for a more robust action research project. For the most part, however, this framework fits and is flexible enough to easily conform to my research question and objectives. This framework also allows me to easily engage in a singular case study. The following section delves into why the case study is best suited as a research strategy for this project.

2.2 Reflections and Conclusions

This section of the literature review will address my reflections and conclusions concerning the state of literature available on the topic of virtual workplaces relative to this research project. Topics include the most important and relevant debates today, why I chose to focus on particular elements of research based on the literature available as I move forward in this research project, who has influenced my thinking the most in terms of the content of the

literature itself, and what alternative writers and influencers did I choose and why, and how the iterative process shaped this literature review. This section concludes with an examination of the gaps in the literature and where my research seeks to fill those gaps and why it is relevant to practitioners today.

Perhaps the most obvious of debates is the overarching question as to whether virtual workplaces are just as beneficial and productive as in-person environments. This is a very important point for all industries to consider as we move toward incorporating more virtual workplace environments. Benefit and productivity can within themselves contain a variety of meanings. Are they more efficient and cost-effective for employers saving potentially thousand on in-person business trips as Hendricks (2014) suggests? Or do they maintain hidden costs and ultimately uncalculated flaws such as employee supplied equipment, potential hacking and security costs among others as Abrams (2018) purports? In the days of a declared pandemic, are they necessary for the health and well-being of our employees as Courtney (2020) argues? Or can online environments cause employees to experience mental and emotional health risks such as feelings of isolation and loneliness (Owl lab, 2019)? Again, though these points are frequently discussed in the literature and offer some insight to productivity, they remain outside the scope of this study.

Another extremely charged debate concerns the nature of the emerging pool of employees available in this new environment. As eluded to in Chapter 1 of this thesis, one can argue as the workplace becomes more virtual, a wider pool of applicants are made available to potential employers (Clear & MacDonell, 2011). This could potentially result in lower costs for both employers and employees and higher levels of diversity contributing to the capabilities and talents of a particular organisation (Hendricks, 2014). However, other types of diversity that indeed could impact an organisation, or the workforce in general in a negative or provocative

way, are hardly new and highly controversial. For example, how does geographic diversity impact pay scale? Will employers start to hire only those from less affluent areas of the world due to the difference in cost of living due to the ease of arranging virtual work? How will organisations adjust pay scale for this in the virtual workplace or should they?

Worker protectionism versus technical innovation has always been a controversial and often-times downright explosive debate considering geographic outsourcing. Ray (2017) sees the inevitable shift from full-time employment to a more independently contracted gig work type environment coming to the forefront in the labour market. He draws on the more common examples, such as the all too familiar telemarketing industry throughout India, to illustrate his point and warns that this is just the beginning and the labour market should brace itself for the drastic shift (Ray, 2017). Bubbling under the surface with the impending impacts of Brexit, the EU already struggles with employment and pay scale in terms of geography (Leijten, 2017). How does the increase in virtual work impact this market? How will the virtual workplace impact this dynamic within multinational corporations? This debate has recently made news as tech giant Facebook announced that employees working remotely, who are allowed to do so due to the pandemic, may face pay cuts since Facebook salaries are based on Silicon Valley's cost of living (Frias, 2020). The future of the virtual workplace promises to be just as charged, if not more so than in the past and how virtual technologies and their usage plays a role has yet to be fully realised. Nevertheless, for the purposes of this thesis, this debate remains outside of the scope of the question at hand as these types of decisions in my organisation are outside of my authority and decision-making capabilities.

Though these are by no means an exhaustive mention of the many debates surrounding online and virtual workplaces and their effects, they do encompass some of the more prominent in the field being deliberated today. Nevertheless, I opted out of considering these in this thesis

as they remain outside of the scope of this piece. This was determined to be the case since it would be moot to consider such arguments as my company has already taken the steps to go and remain completely online and had done so for quite some time. Though these debates remain worthy, they are not so relevant to my particular organisation at this time and thus are not included as a consideration in this research project.

The question of focusing on particular areas of literature and not others is a rather interesting consideration for any scholar to undertake. Onwuegbuzie, Leech, and Collins (2012) caution that all too often literature reviews are compiled merely of a series or compilation of written works whereby the depth and breadth of the meaning of each piece have been ignored or diminished in quality of the overall assessment of work in a particular field. That being said, as with nearly all research questions focused in the field of business administration in general, one could and arguably should, apply a certain level of interdisciplinary considerations in order to provide robust research as well as lend a comprehensive view on the problem being addressed. Management style, bureaucracy, and corporate culture among others are all possibilities and potential subtopics or alternatives routes of investigation investigate my question of efficacy. Undoubtedly these are all interconnected on some level or another and may very well impact the efficacy of communications and production of my organisation's virtual teams.

For example, a newer phenomenon being introduced to our virtual teams involves the egregious practice of micromanagement. Alvesson and Sveningsson's (2003) argument against micromanagement, specifically in reference to organisations with higher functioning and professional employees is particularly intriguing. These elements could also impact communications particularly through the usage of technologies in the virtual workplace. For example, as Alvesson and Sveningsson (2003) point out, if employees increasingly feel they are being watched perhaps a bit too closely for their liking (or in this case, monitored through

technological means such as a monitored chat), they may retreat and become resistant to expressing themselves or their concerns. This also plays into the more personality-driven or psychological effects the virtual workplace can have on individuals. As mentioned earlier, some employees report feeling lonely or have trouble disconnecting from work (Owl lab, 2019). An entire subset of literature touches upon these types of workplace concerns in a psychological context. Though one could argue that these fields can certainly add insight into employee performance I felt they remained outside of the scope of this work. Additionally, as an afterthought in compiling a literature review, going back to Onwuegbuzie, Leech, and Collins's (2012) complaint concerning too many researchers glossing over literature reviews, I am forced to question whether all literature addressing a similar problem or research question is necessarily in the purview of expertise of the writer of the literature review. In other words, though an academic field or individual researcher may address a topic related to my research question, if I, the researcher am not familiar with that particular field, how far should I delve into the topic from that particular point of view? For instance, in the case of psychological effects of technology, though it may be insightful, how qualified am I as an economist to evaluate the opinions of published psychologists? I can certainly extrapolate the main points and conclusions from said research, but am I familiar enough with the field to really examine the contents of the article, engage it with enough fervour, and critically question the findings, as Onwuegbuzie, Leech, and Collins (2012) suggest the researcher should when compiling a literature review? It is for this reason that certain specialized fields, such as psychology, highly technical research detailing backend technology and its user end functions, and medical reports addressing cognitive functions of technological usage, among others, have excluded from this literature review and the research question in general.

In the realm of alternative authors and ideas, leadership in the sense of formal stylistic approaches rather than mere characteristics of leaders was also a possible avenue to explore when deciding how to address the problem of communications. Undeniably leadership style can influence corporate culture, productivity, and a whole host of other issues (McKelvey, 2006). Nevertheless, I felt that preconceived leadership styles, such as those from Raelin's (2010) stylistic approach of utilizing the 4 C's approach to de Bono's (2017) structured decision-making and problem-solving techniques through the Six-Hats communication scheme were insufficient to address the problem. This is not to say they are without merit, but the issues at hand goes beyond leadership styles into a more complex social network and the overall dynamics of virtual communications and applied technology. Additionally, addressing leadership style is not particularly a practical solution to my workplace problem as there are too many leaders and teams throughout the organisation, each with their own personal style. Also, though there are gems throughout this type of literature, such as always considering the collaboration of others (Raelin, 2010), it stands to reason that these are frameworks for the practitioner to adopt. As an aspiring scholar-practitioner, I feel it is incumbent upon me at this stage of my career and education to develop my own leadership frameworks. Isn't this the ultimate goal of the DBA? Therefore, I have excluded these types of works from consideration. Ultimately, these ideas and suggestions, though useful on the periphery, do not directly address the issues at hand and hence were not selected as primary references or topics germane to the central concerns of this project.

The dynamic, non-static nature of the virtual workplace provides for ample and fertile ground for action research projects. As the virtual workplace is a relatively young venue in relation to the greater labour market, it is not a surprise to find that this topic presents multiple gaps in the literature. No literature exists in terms of specifically addressing asynchronous, non-collocated virtual teams, yet this virtual style is becoming more popular as remote positions are

increasingly embraced by corporations (Owl lab, 2019). Additionally, technology is making working across time zones accessible and affordable for even the smallest of companies (Farrer, 2019). These shifts in the labour market make this investigation timely and relevant. Though a cornucopia of technologies exists today which can facilitate better communications between satellite locations and virtual workplaces, the effects of lack of utilization and consequences of this neglect specifically on asynchronous non-collocated virtual teams remain largely unaddressed. And finally, the frequency of use of these tools remains largely unaddressed.

And lastly, I would like to take this opportunity to reflect upon my experience in compiling this Literature Review, indeed it has been unlike any other I have written. Throughout the DBA programme we were introduced to the iterative process. The concept was somewhat vague to me at the time and in retrospect I now understand why. At the time I took this to be akin to the Scientific Method where experiments should be repeatable. This, however, I have found was not quite what was meant by this concept. Eby (2019) describes the iterative process as "a series of steps that you repeat, tweaking and improving your product with each cycle. She advises us to think of the iterative process "as practice to make your product perfect" (Eby, 2019). In this case, implementing this type of research, by default, one is forced to return to your original assumptions, interpretations, and philosophical underpinnings and re-examine them as the research process unfolds. For example, as I have definite ideas about what my literature reviews should cover when examining a quantitative research question. I rarely am required as a matter of completion or at minimum good form to return to the literature review with a very new concept to introduce and even at times to discuss in depth. Here, however, several themes throughout this literature review were introduced by the iterative process. For example, it had not occurred to me to include technical support as an indicator of possible success in the virtual workplace. Only until my interviews took place, through the input of my colleagues and

participants, did I really grasp the importance of this aspect of virtual work. As a result, this discussion was later introduced into the literature review. This was a new and eye-opening experience for me as a researcher, a leader in my organisation, and as a consumer of knowledge. I would go on to further experience this process on multiple levels throughout the research process. I found myself repeating this process within each phase of the research, then repeating it on the aggregate when the finished piece was completed in order to make sound connections and formulate my conclusions. This was an extremely unique intellectual experience for me that I found rather refreshing and enjoyable, more like peeling layers back at each phase to find more knowledge rather than being spoon fed an absorbable dry fact, result, or conclusion.

In concluding this chapter, the findings and outcome of this literature review were meant to specifically address more effective technologies and how to improve communications with each relative to improved production outcomes, both of which are popular topics in the literature but have yet to be addressed in this empirical fashion specific to my organisation. The following chapter, Chapter 3 – Methodology, provides the particulars of the methodology upon which this project was based and how these questions were addressed.

Chapter 3

Methodology

The methodology chosen for a particular research project can arguably be considered as the heart of the undertaking. Understanding the underlying assumptions, the rationale for the study, the formation of the idea of research, and the mechanics of the research project itself are all components that not only must be solidly formed as independent parts, but also must form a coherent whole in order to produce useful, practical and articulate conclusions. As I had come to find out, this is much easier said than done. Many decisions had to be made, many of which were antithetical to my initial vision and instincts for the project. I concur with Flick (2018) in that full disclosure of the researcher's own view is essential to understanding how the research design was formed and directly impacts the credibility of the research itself. This chapter does just that as I delve into my own challenges, experiences, educational background, assumptions, and epistemological views as a researcher. I reveal some influential pieces and inspirations for the project. I then provide an examination of the problematising process, followed by a discussion of the epistemological underpinnings of this particular project. Next, I provide the particulars of the research design for this project. This is followed by ethics considerations, researcher bias, and limitations. This chapter closes with a summary of the methodology implemented in this research project.

3.1 Challenges in Compiling the Research Design

A good example of the challenges involved in the decision-making process in crafting this project was whether to engage in a qualitative or qualitative approach. Though I have studied

both types of strategies and dabbled in qualitative enquiry, I overwhelmingly, as a personal preference as a researcher, prefer to engage in quantitative research. As an economist, my educational background has always emphasized the quantitative as the preferred method of enquiry. Furthermore, being well aware of my educational roots in an American tradition where the quantitative approach is favoured, particularly in peer-reviewed publications and the political and cultural ramifications of such (Grey, 2010), again, I instinctually drifted toward a more quantitative approach.

I generally consider myself a post-positivist and functionalist. I say generally here because post positivism itself (opposed to pure positivism) does accept the notion that qualitative analysis can and does add to research and enhances research on the whole in contrast to purists in the positivist tradition that argue quantitative analysis is the sole pure form of unbiased and functional information (Donaldson, 2004; Racher & Robinson, 2003). However, unlike many scholars, I reject the notion that post-positivists must necessarily be automatically deemed as constructivists – in that reality is necessarily socially constructed - as many scholars would argue (Hoover, Schofield-Clark, & Alters, 2012). Rather, I find my own personal world view aligned with Morgan's (1980) definition of a functionalist paradigm, in that I foster the belief that 'society has a concrete real existence, and a systematic character oriented to produce an ordered and regulated state of affairs' [with the possibility] 'of an objective and value-free social science in which the scientist is distanced from the scene which he or she is analysing through the rigor and technique of the scientific method' (p.608).

Though these are my personal views as a researcher, as you will see later in the Epistemological Underpinnings, Section 2.4 of this chapter, in order to meet the purposes of this research project my personal preferences and views would be suspended. I would leave my

epistemological comfort zone and engage in the best approaches for my organisation as outlined below.

In terms of approach, when examining the field of research in general, I concur with Kuhn's school of thought that disavows the idea of paradigm commensurability (Jackson & Carter, 1991). Let me be clear here, this does not suggest that two approaches cannot be utilized to address a particular research question, rather my stance is meant to avoid confounding conclusions within the same project (Hassard, 1991). This at first blush might seem to indicate that the application of both approaches to the same question yielding different results would indicate that one type of approach is more accurate, superior, or telling than another. This is a false assumption as it is not the approach, but possibly the variables used in reaching the results that have the potential to cause a discrepancy in the resulting qualitative and quantitative finding of the same question (Hassard, 1991). Perhaps not enough data exists in quantitative form to perform a proper study (Creswell, 2013b). Perhaps the aim of the study is meant to glean more tacit information as opposed to my numeric findings and this would be more helpful to an organisation (Virtanen, 2010).

It is due to the rationale above I would argue that these approaches should not be used in tandem but rather to complement each other. Shah and Corley (2006) argue it is at times possible to collect and analyse data concurrently. For example, performing interviews while collecting production outcomes is certainly within the purview of collecting both quantitative and qualitative data from the same sources without confounding or tainting the distinct data types. The resulting analysis of these data sets would indeed complement each other and only enhance the findings; this is particularly so in an action research project where mixed methods within the said project would greatly benefit each other (Ivankova, 2015). This approach is in stark contrast to say conducting an interview while asking similar questions to the same sample in a survey.

Hassard (1991) purports that this is the type of paradigm incommensurability that clearly would cause convoluted results and ill-gotten conclusions. He adds to this argument by asserting that timing in terms of these steps throughout the process is also important in maintaining the validity of the study (Hassard, 1991). For example, the data gleaned from interviews must coincide with the timing of the collection of the hard numerical production data, else the conclusions reached would be moot (Jackson & Carter, 1991).

Also, as mentioned in the next section, one of my inspirational pieces is Malhotra, Majchrzak, and Rosen's (2007) article applying mixes methods, but again, these are in various stages of the research project. Theirs was a qualitative-quantitative-qualitative approach whereby the results were compared and analysis and outcomes from each were compared and contrasted to weed out inconsistencies to ultimately bring them closer to an ultimate conclusion via both approaches (Malhotra, Majchrzak, & Rosen, 2007). Though a time and resource consuming strategy, this particular process of a mixed methods approach does have two distinct advantages. First, if raw quantitative data is lacking, the qualitative collection of data can be a means to acquire it, and thus proving for a thorough and complete final product in the realm of research projects (Johnson & Onwuebuzie, 2004). And second, the addition of the small quantitative data analysis adds to the ease of determining further steps in the reporting phase of an action research project, such as this one (Ivankova, 2015; Creswell, 2013a).

Nevertheless, as Marshall and Rossman (1980) point out, human behaviour is influenced by the milieu in which it resides. The research questions here required taking into account the feelings and impressions of the participants in the study. Even so, for the organisation to benefit in a more functionalist point of view, the production outcomes would produce practical knowledge allowing for my organisation to act accordingly (Donaldson, 2005). Thus, an approach that heavily relies on a qualitative enquiry in the form of interview data collection, but

includes a secondary quantitative collection of data in the form of production outcomes to add to actionable conclusions, would be the best route to undertake for my particular research question and for the benefit of my organisation as a whole.

As Zuber-Skerritt and Perry (2002) astutely point out, the research methodology ultimately should fit the enquiry regardless of preference as long as it is within the researcher's capabilities. Thusly, though my training is primarily centred in the purely quantitative tradition, I felt I had adequate experience and background as a novice researcher in qualitative methods to engage in this project. I also would not have been able to capture the depth and reasoning for participant preference and performance relying solely on quantitative data with such an approach (Creswell, 2013a). In essence, for the purposes of this study, I initially sought to investigate why subjects feel as they do and what can be gleaned from their input and this fits best with a qualitative approach in the form of in-depth interviews. I then followed up with Action Cycles to include the quantitative aspects of production which would provide such measurable results.

Along this theme, Bartunek, Rynes, and Ireland (2006) emphasize the notion that the researcher must consider the audience for which it is written. They argue that research must not only be interesting, but also must be accessible to the intended consumer of the knowledge gleaned. Therefore, it can be argued that even though a particular methodology might be appropriate or even preferred, it must relate to its intended audience, otherwise is useless at best and counterproductive at worst. In short, producing a piece meant for practitioners to have a quick reference to improve their practice while including high-order and complex mathematical calculations may serve to blur the ultimate meaning of the publication and mar the intention of the project as a whole (Bartunek, Rynes, & Ireland 2006). Once I realised reaching out to those practitioners was my ultimate goal I was even more convinced a qualitative approach would be

much more relatable and appropriate. This, again, allowed me to delve into the perspective of the practitioner to glean their perspective (Creswell, 2013a).

Another excellent point Zuber-Skerritt and Perry (2002) raise and is of particular concern when engaging in thesis writing is being mindful of your predetermined timeline. They wisely caution the researcher, particularly novice researchers, not to engage in projects that would require an exorbitant amount of time as the thesis, unlike an independent project, would most likely have a strict deadline and one needs to keep this caution in mind when considering methodology (Zuber-Skerritt & Perry, 2002). Here, again harkening to my quantitative roots, I initially wished to engage in methodological triangulation whereby I would observe, perform quantitative analysis of production outputs, and then interview my subjects (Malhotra & Majchrzak, 2005). Though this type of study was done in a similar vein as I discuss this piece in the next section, this type of research takes years to complete. Though the rigor and relevance gleaned from such a study would certainly render my research worthy, the exorbitant amount of time required for such an undertaking would not only be impractical but also unnecessary in answering my research question. Furthermore, it would also place the project in jeopardy as my limited time to complete it might fall short (Zuber-Skerritt & Perry, 2002). Nevertheless, as a researcher, I found sacrificing this aspect of my vision for this project most difficult. Going through the program planning for this methodology only to find that it might not be feasible in terms of timing and in terms of a strict requirement of integrating Action Research into the project was certainly disappointing. Even so, this new approach for me also represented an opportunity to broaden my perspective on research and add skills to my research abilities.

Due to these considerations above and those that follow in the discussion below, this chapter lays out the step by step process of how this project came into being and addresses the rationale behind the methodology undertaken in order to produce the informational needs of my

organisation. The chapter is broken down into sections specifically addressing; Influential Studies and Inspiration organisation; The Problemetising Process; Epistemological Underpinnings; Research Design – The Case Study; Ethical Considerations, Participant Access and Bias; and Protections, Limitations, and a Conclusion.

3.2 Influential Studies and Inspiration

Although a comprehensive literature review will follow this chapter and address the state of research in the area of virtual workplaces, I thought it appropriate to discuss some key works and encounters that influenced my choices in terms of formulating the research methodology and ideas in general for this project. By no means is this meant to be a comprehensive acknowledgement of all of my significant influences throughout my professional and educational career. Nevertheless, the following are some of the most influential and inspirational facets in this particular major endeavour – my doctoral thesis – and in my academic and professional career to date.

Without question, the series of articles put forth by Malhotra, Majchrzak, and Rosen (2007) were ground-breaking pieces of their time. Virtual Workspace Technologies (Malhotra & Majchrzak, 2005) and Leading Virtual Teams (Malhotra, Majchrzak, & Rosen, 2007) were the first serious, in-depth, and long-term studies to examine the best practices of the virtual workplace. As will be addressed in Chapter 3 Literature Review of this thesis, the study of the modern virtual workplace relative to other subjects and fields of study is relatively young, only being recognized for approximately 20 years (Malhotra & Majchrzak, 2005).

Prior to this, virtual work and its components were considered at best on the fringes of the labour market and at worst, a passing fad. To put this is in a historical context, for example, in the field of education the likes of David Noble challenged the value of technology in learning

and information sharing and going so far as to accuse any form of virtual technology in the classroom as an affront to quality and intellectual freedom with the potential to promote nothing more than diploma mills opposed to any value-added education (Noble, 2003).

At the same time, with such scathing and incendiary points of view concerning the value of virtual technology, Malhotra, Majchrzak, and Rosen (2007) were revolutionary in their research. This was not only in terms of content and challenging the status quo but also in the rigour with which they elevated research in this budding field of virtual work. Theirs was a longitudinal study whereby several sets of interviews took place. After which they compiled hard data and ultimately provided recommendations of practice for the small community of virtual workers (Malhotra, Majchrzak, & Rosen, 2007). This is very similar in terms of the methodology I am employing here except that theirs was a large, funded study that ran much more in-depth and could be considered more of an ethnography than a simple case study as observation was also performed in addition to interviews as well as culture being a major consideration (Creswell, 2013a). Additionally, when their hard data was collected, they ran a series of tests against their qualitative findings and engaged in methodological triangulation (Malhotra, Majchrzak, & Rosen, 2007; Malhotra & Majchrzak, 2005). The amount of rigour employed in this methodology and approach to this study quite frankly set it apart as previously this approach of multiple analysis was only typically seen in the likes of highly scientific studies involving mostly pure science (Mangan, Lalwani, & Gardner, 2004). Ultimately, they would take this highly scientific study and break this down for the practitioner with a series of recommendations for leading virtual teams (Malhotra, Majchrzak, & Rosen, 2007).

I felt that coming across this body of work early on in the program was an absolute goldmine and inspiration for me to strive toward in achieving the right balance of rigour and relevance, qualities Shrivastava (1987) argues are essential to a high-quality research project.

Their rigour in terms of the dedication and methodology and relevance in terms of the ground-breaking aspects of the knowledge and legitimacy they brought to the virtual workplace and practitioners and managers throughout the fields was unparalleled at the time. This, in my view, was the gold standard of research in the area I was about to pursue in my own doctoral studies.

Another extremely influential scholar for me both for this research project and beyond is Michael Marquardt and his series of publications and book, Leading with Questions, accentuating the power of questions and how influential they can be in a leadership role (Marquardt, 2005). In my opinion, Dr. Marquardt managed to bring to life the importance of including the practitioner without humouring their position in the organisation or aggrandising it to the level it might not realistically reach in terms of ability to influence or change the organisation. Instead, he makes the point, rather cleverly, that by listening to those around you, you are simultaneously raising the impact of the participant as well as raising your own position as a leader (Marquardt, 2005). This is so not only in terms of your ability to unpretentiously listen and learn from those working in your team but also to earn the trust and admiration of those working with you – benefitting from both sides of the spectrum. In undertaking this project, I was reminded of the power of questions and felt not only was this an opportunity to gather very pertinent information for my organisation, but it was also a way to establish myself as a leader and gain trust among my teams.

And lastly, I had the privilege to be one of the last students of a giant in the case study methodology, Professor Thomas Raymond. In his famous course work, Written Analysis of Cases, Professor Raymond emphasized remembering the importance of why businesses existed. He felt, expressed in his in his own sentiments and his life's work, they existed to best serve the community(s) in which they held influence (HBS, 2005). As Greenwood (2001) would go on to

later provide proof and confirm that when a stable and beneficial relationship is achieved between organisations and their most vital stakeholder, society-at-large, benefits tremendously.

Professor Raymond dedicated his life to writing and analysing case studies to better the practices of thousands of executives thought the case study method throughout the business community before this was considered a legitimate research design or educational tool; a true pioneer indeed. His consideration of employees as stakeholders and his vision of business for the greater good was most inspiring to me throughout my education and beyond. Here, not only the methodology and the power of the case study as a learning tool, but also the meaning behind his work, greatly influences this thesis. Though I consider myself a novice in the actual practice of conducting research in the form of a case study as this experience was not gleaned from my work with him, I was able to engage in the type of analysis necessary to fully engage in this research venture. This practical application is certainly a goal I would endeavour to achieve here in this piece.

3.3 The Problematising Process

When addressing a problem it is essential to identify the problem thoroughly. Prior to attending the DBA programme, I had not given much consideration to establishing a problem, much less being under the impression a problem actually had to exist in the first place. Although I had prior experience with case studies and even some brief experience with ethnographies, these were not my major academic foci or interests in research. As a trained economist, I was aware that pragmatic problems existed, but I was more focused on accumulating data for the sake of supporting theory or policy proposals. Essentially, I was accustomed to addressing what are commonly referred to as wicked problems. Rittel and Webber (1973) define wicked problems as social problems difficult to describe where policy cannot provide abroad swath of solution(s)

which are expected to solve vaguely defined problems. Therefore, in my prior independent research, I was more so charged with either gathering more data to shed light on said problems, such as producing statistics through which one could glean overarching directions of large scale economies, or I was supporting theoretical assertions and adding to them as more data was accumulated. In short, I was never responsible to be, nor aimed to be for that matter, the conduit of providing a definitive solution. Actionable problems were not in my realm of expertise. My focus was primarily at the macroeconomic level, both in theory and policy. To suggest that I should be considering whether a specific problem existed at the micro-level was a new experience for me.

It was at the very beginning of our classes in the programme where we began to explore the problematizing process. I was quite frankly fascinated and taken aback by how much time and effort certain scholars dedicated to examining whether an *issue* or *observation* on their part was actually worthy of investigation and if they could justify this enquiry, particularly in an actionable way. Though many scholars have set out to provide guidelines as to how to demonstrate and differentiate between dilemmas, puzzles, and the various types of problems and how we learn from them (Petrie, 2010; Pedler, 2008), I have found Landry's (1995) designations of a problem to be the most useful and thorough tool. This concept was introduced early on in the programme but it made a long-lasting impression on me. I have revisited this formula several times throughout the course of the DBA programme and found that not only was it the clearest and most practical format to follow when determining if you indeed do have a worthy problem in your organisation, but it is also provided the most comprehensive guidelines which were complementary to my situation in my organisation. Following these guidelines was the beginning of the roadmap of my DBA thesis.

According to Pedler (2008), the first step in addressing your organisational situation involved determining whether this was indeed a problem and not another type of issue presenting itself such as a dilemma or puzzle (Pedler, 2008). Landry's (1995) landmark (LM) breakdown of this task is quite valuable in this important step in the process. Landry's (1995) approach is specific, thorough, and definitive and includes four distinct landmarks that serve to indicate a problem in fact exists. The following meet the criterion laid out in Landry's (1995) framework for my problem within my organisation:

- 'LM 1 – 'prior occurrences' of this situation result in negative feedback' (Landry, 1995:p.316)

Technologies are always being implemented, which cut costs, but employees felt input and quality of production has since declined.

- LM 2 – 'a preliminary judgement on the intervention capability' (Landry, 1995:p.316)

Employees express the need for more and better communications.

- LM 3 – An expression of 'interest and willingness to commit resources' (Landry, 1995:p.316) to address it.

Executives are eager to become involved.

- LM 4 – 'Uncertainty as to the appropriate action and how to implement it' (Landry, 1995:p.316)

Should we meet more in person? Change technology? Alter or schedule communications? How do we measure this in terms of production outcomes?' (Adams, 2012:p.3)

All of these uncertainties lead me to the conclusion that a problem of communications in our virtual workplace did in fact exist.

3.3.1 Research Question

After establishing that in fact a problem does exist within my organisation as outlined above, a posable research question was formulated. The literature suggests several characteristics of a good action research question, these include; focusing on a single problem and the problem itself is researchable (Creswell, 2013a), the question is feasible within a practical timeframe and

constraints (Zuber-Skerritt & Perry, 2002), the question is specific enough to answer pointedly (Fletcher, 2007) and complex enough to require rigorous investigation and relevant enough to the researcher's field of study (Shrivastava, 1987). Furthermore, action research questions by the nature of the research itself should be focussed primarily on the needs of the organisation rather than the individual performing the study, thus benefiting the organisation as a whole (Signor, 2000). In light of the suggestions above and in revising my problem throughout the program, taking advice for revision from both my peers as well as my professors at the University of Liverpool, along with the gaps in the literature review and my own personal observations in my organisations taking account the needs of my organisation, the following research question was formed:

Research Question: Which of the three available technologies (skype, email, chat) and in what frequency should these be deployed by the Leader in order to enhance (Reader) performance?

3.3.2 Aims and Objectives of the Study

The aims of this study are based directly on the research question above and map out my intentions and what I wish to achieve in conducting this study. Likewise, the subsequent objectives are directly gleaned from the aims and represent the deliverables of this study I wish to produce and how I will go about producing them. According to Bhasin (2019), the results of exploratory research will provide more of an in-depth understanding of a problem especially because it has not been examined before. The initial interview in this study will do exactly that as prior research in this area has never been performed in my organisation. Hence, the objectives through the subsequent action research portion of the project will ultimately inform the recommendations provided at the conclusion of the study.

AIM 1: To investigate the optimal utilisation amount or *frequency of communication* to produce efficiency and accuracy in production.

Objectives:

To estimate the necessary frequency of use for the successful implementation of communication in terms of an increase in production *quantity*. This will be achieved by comparing *initial interview* findings and findings throughout the literature.

To estimate the necessary frequency of use for the successful implementation of these technologies in terms of an increase in production *quality*. This will be achieved by comparing *interview findings* and findings throughout the literature.

AIM 2: To critically assess the implementation of *communication technology tools* in the virtual workplace in my organisation.

Objectives:

To identify the main communication technology tool preferences of the virtual team members through *Action Cycles and mini-dialogue interviews* and an increase/decrease in production *volumes* via production data collection.

To identify the main communication technology tool preferences of the virtual team members through *Action Cycles and mini-dialogue interviews* and an increase/decrease in production *accuracy* via production data collection.

3.4 Epistemological Underpinnings

In undertaking any research project, how the researcher approaches the project and consequently where the researcher's knowledge originates from has an impact upon how the research is conducted. Epistemology, the branch of philosophy addressing the study of knowledge, is defined by Morgan (1980) as that 'which seeks to explain and predict what happens in the social world by searching for regularities and causal relationships between its constituent elements' (p.609). It is in itself a fascinating journey and investigation into one's own world view. I like to think of epistemology as answering the simple question of how we know what we know. In order to determine this, many scholars and philosophers have grappled with this question throughout the ages and thus a thorough review of all points of view concerning this branch of philosophy is not only impractical but unnecessary for the purposes of this thesis. Earlier in this chapter, I discussed my own personal perspectives on how I as a researcher view

the origins and purpose of obtaining knowledge. The epistemological discussion in this section will remain in the context of organisational theory and this specific research and how these approaches I decided upon the research design for this particular investigation.

Generally speaking, there are four main categories of epistemological perspectives; positivist/post-positivist, postmodern/poststructural, critical, and interpretivist/constructivist (Merriam, 2009). This action research project has characteristics primarily of an interpretivist point of view for the qualitative approach in the form of in-depth interviews and their analysis. This is necessary as I seek to extrapolate the beliefs, opinions, and other tacit information that are best demonstrated through this approach and perspective. Morgan (1980) defines the interpretivist paradigm as 'a view that the social world has a very precarious ontological status and that what passes as social reality does not exist in any concrete sense, but is the product of the subjective and inter-subjective experience of individuals' (p.608). In support of the above objectives, VanMaanen (1995) argues interpretivism is the only way an individual (or a minority) can be acknowledged and therefore allows for change to be enacted and issues or problems can gain recognition. This clearly and accurately addresses the type of information I mean to glean from the study and the in-depth interviews and thus is an appropriate paradigm in addressing my research question and analysis.

Nevertheless, this research also integrates a small portion of quantitative research in the form of data collection of production rates and accuracy in the action research cycles portion of the project. As Creswell (2013a) argues, the type of research design provides for a particular procedure throughout a particular research approach. Again, though this combination of a mixed methods approach holds very divergent epistemological and ontological underpinnings (interpretivist/subjective and relative views gleaned from the qualitative interviews and postpositivist/functionalist, or concrete results gleaned from production outcomes) these are not

necessarily contradictory in a mixed methods or an action research project such as seen in research designs such as this one where paradigm incommensurability does not occur and thus, these perceptions do not clash to confound results (Creswell, 2013a). In essence, I would argue that action research itself is the combination of two distinct methodologies acting in tandem to produce a single result and actionable outcomes.

Though I have decided upon the approach outlined above and believe it is the most appropriate and fitting approach for this research project, I do not mean to suggest that other alternatives should be considered unfeasible or inappropriate for the task at hand. For example, though strictly applying constructivism in its most complementary methodology (i.e. Hermeneutical – interpretive) could be applicable here I do not think this is a particularly a good fit for subsequent action research to be applied (Miller 2017). Here, a conflict of the nature of the ontology (i.e. Relativism) could be confounding (Miller, 2017). Indeed, if I am seeking to ultimately be practical and I adopt a view that arguably states truth is relative, then how would this be thoughtfully or judiciously applied to practical solutions? The same issue can be raised in terms of applying critical theory. Though on a personal level I find the application of critical theory to be more flexible in term of the potential methodologies that could be applied (Scotland, 2012) and more ontologically concrete, I still would question the appropriateness of relativism in applying this to action research. Again, relativism is a challenge when interpreting data and applying it to practical solutions if it is not backed by some sort of concrete demonstrable evidence. Can these approaches and philosophical standpoints ultimately be applied to produce actionable results? Certainly. Are they the clearest and most effective or productive? I would argue not. For example, by adding some form of quantitative analysis the conclusions become somewhat more concrete to the reader and I, as the researcher, feel more comfortable with approaching this type of work from a more objective fashion opposed to adhering strictly to the

ontology of interpretivistic relativism. In short, the mixed methods of action research are best served by this combination of an interpretivistic qualitative methodology with a positivistic objective and actionable interpretation and conclusion. As demonstrated in the research design outlined below and later on in the action research portion of the thesis, and as Johnson and Onwuegbuzie (2004) would argue, they are complementary in nature.

3.5 Research Design

The term research design has been described in many ways by numerous scholars and across disciplines, each in including a wide variety of components depending upon how each scholar interprets the necessity of each element they choose to include. In order to better understand the components of research designs in general, one must first understand what is meant by research. According to Leedy and Ormrod (2001) research is more than just acquiring raw data, facts, and information, rather, research involves the entire scheme of gathering, scrutinizing, and evaluating data to understand an occurrence presented by the said researcher.

I concede there are many suitable research designs and approaches available to pursue when considering addressing the research question posed here. Even so, it is necessary to mention to the readers that a requirement of this DBA degree is that action research specifically be incorporated into the thesis (UoL, 2017). That being said, when considering a research design including action research, one is compelled to consider exactly what constitutes action research? Is action research an approach all by itself? Is it, by default, a mixed methods approach? Can it be considered a thorough action research design without a way to extrapolate the beliefs of the subjects in a qualitative way? And if so, can action research be thorough if it does not produce solid, quantifiable evidence to report so that progress can be gaged and changes or modifications can be enacted?

Interestingly, I am not alone in this somewhat perplexing classification conundrum where action research is concerned. Ivankova (2015) after reviewing numerous action research peer reviewed publication, found that '47% in which the use of mixed methods was indicated, the authors did not elaborate on the mixed methods in the body of the article' (p.64). She proposes two possible explanations for this; 1) 'not all action researchers had enough information on how to integrate mixed methods and action research…' or 2) '…that [the researchers] considered the use of multiple quantitative methods as a part of the action research design' (Ivankova, 2015:p.64). These points are germane to this thesis because as a matter of organising this project, the research design portion includes qualitative data collection as the initial source of data. Once the qualitative data was collected, the next phase of the research, through Action Cycles would produce and represent the quantitative and actionable data collected (production rates and accuracy). As elaborated upon in Chapters 4 and 5, these two distinct types of data combine to formulate the actionable knowledge and ultimately shape the actions taken and recommendations formulated by this project (See Appendix A for Research Design Concept Map details).

Coghlan and Brannick (2014) as cited by Wilding (2015) shed some light on this issue as they make a distinction between the Thesis Action Research and Core Action Research within a singular action research project. The Thesis Action Research is performed by the researcher (in this case, the qualitative portion in the form of in-depth interviews). The Core Action Research is the portion through which collaboration occurs between the researcher and the participants in order to form an action plan (Wilding, 2015; Coghlan & Brannick, 2014). Ultimately, from this point of view, the first portion of the research actually monitors and keeps in check the second portion, or core action research portion (Wilding, 2015; Coghlan & Brannick, 2014). Simply put, the interviews (Thesis Action Research) will serve to influence the Cycles of Action (Core Action Research) and will confirm what and if any action needs to be taken or change needs to

be taking place. Checkland (2001) as cited by Wilding (2015) adds to this distinction in that the first portion of action research has a more investigative directive while the second portion has a more problem-solving directive. This conceptualisation of an action research project is the foundation of the research design of this project and is illustrated fully in Appendix A of this thesis.

3.5.2 The Case Study as a Research Strategy

Since I have already established the need to delve into the thoughts and beliefs of my participants and came to the conclusion that qualitative analysis would be the most appropriate route to pursue in the first portion of this project, the next step would be to determine the best strategy or approach in addressing these aims. Creswell (2013a) describes the 5 qualitative approaches and their foundational considerations, these include; narrative research, phenomenology, grounded theory, ethnography, and the case study. By the process of elimination, it is very easy to conclude that the case study is the optimal route for meeting my objectives. The narrative is immediately eliminated as it involved the study of an individual (Creswell, 2013a). Phenomenology is arguably the closest alternative possibility here as indeed I am examining a collective experience of a number of participants on a fairly in-depth level (Creswell, 2013a). Nevertheless, as this thesis is action research based (by requirement) ultimately the unit of study here is the organisation, or more specifically, my department (Creswell, 2013a) and a case study is more suitable for such an undertaking. Grounded theory is also quickly eliminated because, according to Creswell (2013a), 'it involves grounding a theory in the views of participants' (p.104) which is unnecessary for the purposes of this project. An ethnography is also inappropriate due to the fact that as mentioned earlier, this team is comprised

of individuals and does not share a culture, a necessary characteristic for an ethnographic study (Creswell, 2013a). This leaves the case study as the most appropriate study to undertake for this project.

Creswell (2013a) describes the case study as 1) 'developing an in-depth description and analysis of a case, 2) studying an activity of more than one individual, and 3) providing an in-depth understanding of a case' (p.104). Perhaps the best indicator for this choice is found in Creswell's (2013a) descriptor of case studies in that they involve the study of a confined system. In this project, one case will be studied, my organisation, and the confined system will be the independent virtual team I will be working with in the virtual workplace. This is also complementary to Yin's (1994) rationale as the case study is best applied when examining a distinctive situation or circumstance. For the purposes of this study, I will be examining a unique virtual community of employees working together in an asynchronous non collocated independent virtual workplace. Several characteristics of this team make them unique; 1) the individuals in the team are independent of each other and are located across the US. 2) The members of the team do not collaborate with each other (though they do have contact with their Leader for the day). Rather, they are intentionally anonymous to each other as they grade essays and work from the same candidates so that there is no collaboration or influence on their grading. 3) Members or cohorts are assigned virtually and randomly through an auto-scheduler and thus, have no say in which team they will be joining (though for this project, I have obtained special permission to maintain the same participants throughout the study). 4) Though stemming from different disciplines, all members of the teams have attained high levels of education (Master degrees and above) and have experience in higher education settings as lecturers and/or significant writing and teaching experience. These are just some of the unique characteristics this virtual workplace carries with it and the takeaway here is that indeed, this does fit the description

of a unique and confined system as Creswell (2013a) suggests. The next section briefly addresses the data collection methods employed in this project.

3.5.3 Empirical Research Context

Expanding upon the organizational background provided in the Introduction of this thesis, it is also important to discuss how the functions of each actor (here Leaders and Readers in the virtual teams) can be measured and put into context for the purposes of gleaning any real meaning from the empirical results to be obtained. According to Emerald Group Publishing (2021) "empirical research is research that is based on observation and measurement of phenomena, as directly experienced by the researcher. The data thus gathered may be compared against a theory or hypothesis, but the results are still based on real life experience. The data gathered is all primary data, although secondary data from a literature review may form the theoretical background." Here I will discuss the key measurements and observations made through the collection of data and put them into the context of my virtual workplace to establish a solid understanding and continuity of how this data is measured and analysed.

Shifts referred to in this thesis consist of 8 hours. Every shift referenced in the Action Research has a span of exactly 8 hours with two 25 minute breaks and one half hour lunch break. Shifts cannot be manually expanded as logins and log off times are computer generated. Therefore, observations and data collections are limited to exactly the prescribed shift durations (8 hours exactly).

Evaluations of each position are a bit different. Readers are evaluated strictly by quantity and quality of production. For instance, Readers must remain under 1% discrepant (2 score points to their counterparts) to be considered accurate. They must also remain close to the hourly rate of 17 essays per hour. Of course, there is always leeway for this as some essays, due to the

length, content, and complexity, may take longer to rate than others. If a Reader falls behind the 17 per hour mark, Leaders can have discretion as to how to include that in the End of Shift Report (every Reader is evaluated by the Leader by the end of the shift and it becomes part of their permanent record. Leaders, on the other hand, do not have a direct evaluation process per say. However, as Leaders rotate, they are required to periodically become Readers and thus are evaluated by their Leader peers when working as a Reader for a particular shift. These shift assignments are delegated by HQ a month in advance and Leaders and Readers do not get to choose their role as they are assigned as needed. Only experienced Readers, after being promoted and trained are given Leader roles.

Essays to be read are entered into the queue at HQ and they are never handled by Readers or Leaders all essays must be read anonymously for security and integrity purposes. The only information both Readers and Leaders see is the question and the responses from anonymized candidates. Groups are never evaluated as a whole since volumes of essays fluctuate. For instance, a team may only consist of 8 Readers as the typical 15 may be too many and would cause a shift to end early. Score creep is an internal term used when essays are particularly good (or bad) and then an anomaly occurs in the batch. These essays can be easily scored incorrectly as they are erroneously compared with the scores of other nearby, recently rated essays. This is a phenomenon that can occur easily with rubric scoring in general. It is the sole responsibility of the Leader to catch these occasions and warn Readers this is in fact occurring. There is no mechanism to indicate score creep is occurring. This is purely done by the Leader performing backreading and comparing peer scores. In essence, as per the research question, the ultimate goal here is to determine the method to achieve the best quality (discrepancy occurrence) and quantity (rate per hour) through the collection of technological and communications data.

3.5.4 Data Collection- Semi-Structured Interviews and Action Cycles

The initial set of interviews seeks to find out how the participants in my virtual team feel about the quality of communication through technologies implemented in our workplace and their preferred frequency of use. This set of questions is aimed at investigating how communication is perceived by them and what approach in their view best aids in their production performance. As Creswell (2013b) suggests the interview guide should consist of reworded Aims and Goals (as a singular research question is being addressed) as the answers to these questions are at the heart of the matter of the action research portion of the thesis. Therefore, the first part of the research (in-depth interviews) and subsequent questions were based on the first set of Aims and Goals proposed in the thesis, specifically interested in discovering, 'What is the optimal amount or frequency of contact and communication that we should be adopted to improve the quality and quantity of scoring production?'

It is important to discuss the potential of the Hawthorne effect in this study as the participants of this study were aware they were being watched in their performance. While some would argue whether the Hawthorne effect is a significant consideration and others would argue whether it exists or is a matter of consideration at all (McCambridge, Witton, & Elbourne, 2014), for the purposes of this study, I would argue it is not a concern at all for several reasons. First, as mentioned earlier, this is a very unique group of participants in that they all are very familiar with research (as most are researchers themselves). Secondly, they are regular participants in research studies both in and outside of this setting. And lastly, the culture of this particular group of participants is unique in its approach as they are used to engaging in an academic defence of their work. Though there is no guarantee this phenomenon does not exist here, it is highly unlikely in this setting such a consideration would occur or be deemed significant.

The following is the complete guide compiled for this set of in-depth interview questions.

Figure 3.1 Interview Guide

Interview Guide for Project: Communication Technologies in the Virtual Workplace
Time of Interview:
Date: Place:
Interviewer: Interviewee:
Age: Gender (if identifies):
Graduate degree: Master or Doctor
Position of interviewee: Leader or Reader Only
How many years of experience in this department?

Project description: An action research project seeking to investigate the efficacy of various types of technologies and their usage in the virtual workplace. Specifically, how frequency and methods of communication via a variety of technological platforms impact the quality and quantity of production in asynchronous, non-collocated virtual work groups.

Questions:

1. Do you feel your Leader communicates with you frequently enough? Why/why not?
2. How much time do you spend communicating with your Leader in a given shift and do you feel your Leader communicates with you sufficiently and substantially each time? Why/why not?
3. Do you generally feel more prepared and informed to read after communicating with your Leader? Why/why not?
4. Do you believe your production quality and quantity improve after communicating with your Leader? Why/why not?
5. What communication technologies do your Leaders use the most with you? Do you find these technologies effective? Why/why not?
6. Does your Leader mostly initiate contact first or do you contact your Leader first within a given shift? Do you feel their communication is always necessary or helpful? Why/why not?
7. Do you feel the platform aids in your communications with your leader? Why/why not?
8. What is the most common communication technology Leaders use to contact you? Which do you prefer and why?
9. Do you have any questions or anything you would like to add concerning your experience with using communication technologies in our virtual workplace?
10. Of course, this interview is confidential and your responses will remain anonymous. We may have a follow up in the near future. Thank you!

Source: Creswell, J. (2013b) *Qualitative inquiry and research design: choosing among five approaches*.(Kindle Location 3218) Kindle Edition, London: Sage Publications. Along with modifications by the author.

As stated earlier, I was interested in finding out the feelings and beliefs of the participants to shed more light on not just what worked for them but why it worked for them. Additionally, I would be interviewing high-level practitioners with a great deal of insight and experience to offer. Since these participants are in a single organisation, a case study was in order (Creswell, 2013b). According to Harvey (2020), this research milieu heavily lends itself to in-depth interviewing as this type of interviewing technique is even at times referred to as 'case study interviews'.

That being said, there are a wide variety of interview styles one can utilise to glean information, some include; structured interviews, where the topics discussed are pre-set with the intention in mind to remain strictly on the topic of the questions giving the respondent very little latitude in changing the direction of the question, unstructured interview (or open-ended interview) where the discussion takes a free and open approach, even at times straying off-topic, dialogic interviews, similar to the free approach in open interviews except back and forth dialogue between participant and researcher is more encouraged, and a host of other more pointed interview types, such as interrogation, also can be utilised (Harvey, 2020, Creswell, 2013a). I feel this style not only helps relax the participants in this particular setting, but also aids me as the researcher in shedding potential bias.

For the purposes of the first phase of this study, however, in-depth, semi-structured interviews were used. This type of interview encouraged the participants to participate on their own terms and takes somewhat of a middle road in keeping the participant focused on the point of the question, yet allowing enough leeway for them to create their own train of thought when responding (Harvey, 2020). These interviews also generally can include an open-ended question at the end for the participant to include any information they see fit (Creswell, 2013b). I particularly like this addition, not only because the participants are very experienced and have a

lot to offer in terms of insight, but also being an insider, by including an open-ended question at the end of the interview, I reduce the chances of injecting my own bias into the interview itself (LeBaron, 2010; Laurilla, 1997). As Mumford (1996) aptly points out, as internal researchers it is imperative that we remain aware and vigilant in our quest to keep our biases in check. In this case, adding the open-ended question not only allows the participant freedom to express themselves and ownership of the research (Marquardt, 2005), but also allows for a certain amount of freedom to the participants while placing a check on my potential bias and position as a duel insider and researcher. In other words, the participants are not locked into my line of questioning which could be leading or restrictive allowing for the participants to take their own direction and perhaps introduce an aspect of our communications I had, out of my own bias, neglected or overlooked in the compiling of my interview questions.

Continuing into the second, more quantitative phase of this project involving Action Cycles and mini-dialogues, the same logic and rationale applies. Here, the second set of Aims and Goals were addressed to glean specifically, 'What communication technologies/tools available to us improve the efficacy of the virtual workplace? Does the type of communication via a variety of technological tools impact the quality and quantity of production?' Again, these were the same participants as in the first phase and are in a confined and fit the criteria and description of the case study and subsequent interviews as outlined above (Harvey, 2020; Creswell, 2013b).

3.5.5 Participant Selection for the Study

An interesting element involving this project concerned the nature of my role as a participant observer and the selection process of the participants of this study. According to Open.edu (2020)

> ‘Taking a participatory approach to research or action requires an appreciation of who could or should potentially participate. Experience generally shows that when changes are proposed to existing situations, the effects of those changes will be different for different people – they will have different stakes in the potential outcomes. Thus a fundamental part of most participatory methodologies is some form of stakeholder analysis.’

This posed a particular challenge to this project for three reasons; first, as a participant observer leading the virtual team and an insider, as LeBaron (2010) points out, the insider already carries with them ’baggage’ in having biases in terms of my own viewpoints within their own organisations. As for myself, not only did I have preferences for the available technologies, I also had leadership biases in terms of how I run a given shift. Furthermore, I had partialities for particular leadership strategies that some of my colleagues employ. I had to consider that I might be interviewing a colleague that I fundamentally clash with in terms of their views on leadership. As LeBaron (2010) argues, being aware of these biases is a big step in terms of mitigating any negative consequences in terms of this research (i.e. discounting one’s opinion that I disagree with or underplaying the significance of a point that I reject).

Second, due to the nature of the set-up in terms of our virtual workplace operations, I did not have the luxury of selecting participants. I arranged for a certain cohort of participants to be placed in my team, but I was unable to select the specific participants or exactly which individuals would be in my team. This was done through the automatic scheduler. Since my teammates and I all basically had the same position in the organisation. I could escape this inevitable potential bias in my participant group. To mitigate this challenge, as suggested by Harvard Faculty of Arts and Sciences (HFAS, 2019) the in-depth interview questions were open-ended to ensure I could capture the subtle nuances the participants express and was mindful and took note of their experiences throughout each change (i.e. changes that impact men more so than women or experienced Readers more so than novices), particularly in the action phase of the data collection.

And last, as mentioned earlier in the Introduction of this thesis, our virtual workplace structure limits the number of participants I could have and remain as a participant observer. Our teams generally range from 10-15 Readers and 1 Leader per group. Some scholars argue there is a necessity to include a minimum number of participants to maintain a high-quality research project (Dworkin, 2012). Others argue that the number can be very low as long as the quality of information gleaned is high (Dworkin, 2012; Charmaz, 1990). Another way to look at this issue is to consider the purpose and topic of the study in order to make a proper and justified judgement on the number of participants included (Dworkin, 2012). Though I was restricted from making this choice, I would have liked to have had more participants, as Creswell (2013b) aptly points out, being able to choose a variety of participants is an advantage as it provides a greater scope of viewpoints). Nevertheless, according to (Morse, 2000) it is ultimately 'saturation' or the point at which no more information of use could be gleaned from a larger sample that determines this elusive number (Dworkin, 2012). As this number (10-15) accurately represented the teams in my organisation and the point of action research is to first and foremost address a problem in my organisation opposed to on an individual level, then under this concept of saturation, this number of participants was sufficient, particularly for the scope of this study.

3.5.6 Interview Setting

Creswell (2013b) argues that telephone interviews can be a convenient way to interview the participants if there is no way to gain direct access to them. As this is a virtual workplace and the participants of this study were scattered throughout the continental United States, Alaska, Hawaii, and the US Territories, this method of communication was overwhelmingly the best way to conduct these interviews. One major disadvantage Creswell (2013b) points out concerns the interviewer's inability to pick up on body language or other cues that might be telling of a

participant's response to a question. Perhaps they physically shifted in their chair or displayed a posture indicating concern or visible nervousness when asked a particular question. Because of this, I employed a suggestion proposed by Miller, Gayfer, and Powell (2018) to solve this issue. They point out the significance of verbal cues such as hesitations to respond, unintended pauses, stresses on particular words, use of emphatic phrases, such as 'let me be clear' or other possible signs of shifting in their thinking as a way of mitigating this potential issue (Miller, Gayfer, & Powell, 2018). These verbal cues were noted and such verbal emphases and expressions were considered in the data analysis.

The initial interviews were performed first to determine which, if any, communication issues, were present. This was followed by 3 Cycles of Action to whittle down and augment these practices. A total of one initial interview and three follow up mini-dialogue interviews were performed. The initial interview took place as soon as I was assigned my cohort and the participants responded with their interest in participating. Fifteen requests were sent out (the number of potential participants in in my virtual group; no one was excluded). Thirteen participants responded positively and the remaining two indicated they felt they were too busy with external work, not relevant to the study or our shared workplace, to fully participate. The three subsequent interviews during the action research portion of this project took place at the end of each period of introducing the new technology. It was safe to assume that all interviewees were comfortable and relaxed as they all either worked from their homes or from their professional offices (providing they have one, such as professors, teachers, or writers/editors at a publishing company, if they do other work outside of the organisation). Table 3.1 below provides the timeline of the interviews that took place.

Table 3.1 Research and Data Collection Timeline

Date(s)	Activity
October 16, 2019	Granted Ethics Committee Approval
October 18, 2019	15 consent forms are sent out and 13 are returned by willing participants
Nov 10 - Nov 23, 2019	Initial interview data collection (Thesis Action Research begins)
Nov 24 - Dec 7, 2019	Initial interview data is analysed
Dec 15 - Dec 21, 2019	Action Cycle 1 begins – Skype (Core Action Research begins)
Dec 22 - Dec 28, 2019	Mini-Dialogue takes place, Reflection and Report Write-up
Dec 29 - Jan 11, 2020	Time Break (two weeks)
Jan 12 - Jan 18, 2020	Action Cycle II begins - Emails
Jan 19 - Jan 25, 2020	Mini-Dialogue takes place, Reflection and Report Write-up
Jan 26 - Feb 8, 2020	Time Break (two weeks)
Feb 9 - Feb 15, 2020	Action Cycle III begins – Chat
Feb 16 - Feb 22, 2020	Mini Dialogue takes place, Reflection and Report Write-up
Ongoing	Recommendations Write-up

3.5.7 Accuracy, Validity, and Reliability

As with any research project, accuracy, validity, and reliability are always a concern. Accuracy, relative to research, can be thought of as ‘making measurements that reflect the 'reality' (however determined) as far as possible devoid of mistakes and taking account of biases (Harvey, 2020). Validity can be thought of as ‘how accurately a method measures what it is intended to measure’ while reliability can be best described as ‘the consistency of measure’ (Middleton, 2020).

Admittedly, in contemplating this research design, a qualitative case study involving in-depth semi-structured interviews followed by three Action Cycles, one is left to wonder about these three very important aspects of research and how they can be adequately addressed. Again, harkening to my quantitative roots, I have relied on statistical indicators in order to gain confidence in my findings. Here, this is not possible, at least not in the initial round of interviews. Creswell (2013b) sums this concern up well when he poses the question of whether it is even possible to know or obtain a 'right answer' under such conditions (Kindle Location 4529).

Harvey (2020) provides a somewhat calming response to these concerns in this research format when he points out that though this design can lend itself to these elements remaining largely unknown, the researcher has to decide the intent of the research itself and weigh the consequences of the results. In other words, if the researcher's intention is to gather a more tacit culmination of responses, then the ultimate importance of consistency and measurement is somewhat diminished (Harvey, 2020).

One advantage here would be to rely upon what Lincoln and Guba (1985) refer to as naturalistic inquiry. Here, they argue trustworthiness can be achieved through four main criteria, namely, "credibility, dependability, confirmability and transferability" (p.17). Lincoln and Guba (1985) argue that this can be established by presenting myself as an "objective observer" yet also maintain my credibility that I have established over time (p. 293). This is essentially the balancing act I had to establish in order to guarantee the highest degree of reliability, not only in the collection of the data, but also ultimately in the final analysis of such data and in the presentation of such findings. The atmosphere I created and the methodology of this undertaking determined these all too important facets of the research. That I was already an established member of the organisation, the participants already knew my reputation for being fair and open

with them as a Leader in the department. Additionally, having created a methodology that allowed confirmability (through production rates) and transferability (throughout our programs) also served to increase trustworthiness not only for internal research purposes but also for the conclusions gleaned and utilisation of said conclusions throughout my organisation.

In this case, as an enquiry mostly meant to inform my organisation and the leadership within it, this was the best avenue to take as the responses gleaned were much more important than whether or not the experiment could have been repeated scientifically or if the results were statistically significant. Therefore, though admittedly not a perfect science, this design and the methods contained within it yielded the appropriate information my organisation and I were searching for from these participants.

3.6 Ethical Considerations

As with any study, ethical considerations and generally accepted research practices are always at the forefront of good scholarly practice. The following sections address such practices and ethical considerations required by the University of Liverpool. Many of these considerations have been scrutinized by the Ethics Committee and my lead supervisor and have been approved on October 16, 2019. These conditions are presented here in this thesis for the benefit of my reviewers so that they may also be aware of the ethical considerations that were and are in place throughout this research project and beyond. In addition to these mandatory ethical requirements, I have included some discussion on other topics of ethical and philosophical concern when performing research studies in general, such as access to my interview subjects, bias, and data treatment. This is followed by closing thoughts.

3.6.1 The Participants – Access, Reprisal, and Informed Consent

In performing any type of organisational research, access to data can become a precarious obstacle. This was so not only in terms of proprietary and intellectual property considerations, but also in gaining access to participants for the purposes of gathering qualitative data. There were several reasons for this. As Easterby-Smith, Thrope, and Lowe (2002) point out, time is money for organisations and especially for executives. They make the point that it may be a challenge to get participants to agree to sit down for an interview that can cut into their precious and limited time. Another issue can be obtaining information and gaining access to what a company might feel is protected and proprietary (Creswell, 2013b). Access, where this research project is concerned was not a problem for several reasons. First, my organisation is an academically based institution. This was important as the people granting permission for the study as well as the participants had a very solid understanding of what research projects entail. So access was not a problem as research projects are widely understood and welcomed, especially those like this one which are meant to contribute to our organisation. Additionally, I was scheduled to be a Leader during the times of the study and potential participants were randomly assigned to my groups via the scheduler. Again, this goes along the lines of ease of access to my participants which proved not to be of issue.

Additionally, recruitment was also not an issue. As the vast majority of employees were academics, there was very little need to convince the executives and the participants that their information is secure, particularly since I was an employee and not an outsider (Laurilla, 1997). They understood very well what research was and it was even somewhat of an inside joke that we all stand for each other as participants for our graduate degrees. This familiarity also helped in gaining willing participants for the study as everyone is supportive of each other's educational endeavours.

On the other side of this, however, was the issue of reprisal. Likewise, it should be noted that the participants were independent virtual workers and are experts in the field. Regardless of my own personal preferences and assumptions in terms of technology usage or leadership strategies, it should be known that participants were not in any jeopardy and were able to speak freely without fear of reprisal. Those I interviewed were my colleagues and I would not have the authority to carry out any sort of reprisal against them if they were to disagree with me or speak their minds in opposition to what they may feel is my own personal position on a particular matter.

A Note Concerning Informed Consent – As per the requirements of the University of Liverpool, I adhered to the ethical guidelines involving human subjects in a research project. The following were some of the caveats included in the ethical consideration for said participants.

The participants were emailed the required Participant Information Sheet and the Consent Form to sign if they wish to participate in the study (See Appendices B and C respectively). They were given ample time (no less than 2 weeks prior to the commencement of the study) to read over the material, pose any questions they might have about the process, data collection, privacy and confidentiality, and any other relevant information they might have wished to obtain. Participants had the full freedom to withdraw at any time prior to the closing data collection date (when data will be anonymised). There was no physical contact (as interviews were done via telephone) and no identifying demographic factors were taken and therefore, risk to physical person or reputation did not exist in any tangible or substantial way. Participants did not waive their legal rights. The participants were free to withdraw from the study at any time and were reminded of this throughout the process. In the event a participant expressed their desire to withdraw from the study, they would be removed from the pool of participants immediately and

their data (if any was provided at the time) would be destroyed. It should be noted, none of the participants withdrew from the study.

The design of the study itself was created with the premise of protecting privacy, ensuring confidentiality, and maintaining anonymity. Since personal details were not collected and were not necessary for the study, anonymising the data was a relatively simple process and reduced the risk of breaching university policy. For example, names were not used in interviews, rather the participants were simply noted as P1, P2, and so on. Anonymity was maintained.

3.6.2 The Data – Protections, Storage, and Disposal

According to the European Commission on Research and Innovation (2018), 'data protection is both a central issue for research ethics in Europe and a fundamental human right' (p.3). In keeping with the spirit of this sentiment, the following protections were taken to ensure the participants of this study were afforded their rights as subjects of this research project. (Some of the following was submitted as part of the Ethics Committee Review for Research Approval, again, this is included for the benefit of the reader so they are aware of the procedures put in place to protect the participants of the study. (See Appendix D of this thesis for Ethics Committee Response Form and Approval for details).

Anonymity - The information gleaned from the participants was hand-written and coded so that names will not appear along with data once transferred and stored. The hand-written notes would be destroyed after anonymisation. Hand-written notes, though usually not the choice method of data collection were preferable here not only due to the audio communications via telephone being utilised, but this also assured participants' anonymity and satisfied their contractual obligations with the organisation and their restrictions on speaking about proprietary matters outside of official business. No identifying demographics were collected and no audio or video

was recorded. This might seem like an extreme measure to take and an inconvenient one at that, but I chose not to use electronic devices not only to protect my participants, but also to protect myself. In the US, where my participants all reside, though recording conversations via telephone with the consent of one party is federally legal, it may raise some legal issues on the state level as each state has its own laws governing telephonic communications and some require two-party consent (FCC, 2020). Because I could not guarantee exactly where my participants would be at the time I will be calling, I choose not to risk violating local laws and recorded my interview notes by hand.

Data controls - Data will be transferred into a database that will anonymise the participant (i.e. P1 – Participant 1, P2 and so on). Position and experience were used in place of the legal name of the participant. For example, 'An educational tech expert was concerned that…' If the participant's title was too obvious or too unique that it could identify them, then the quote was used anonymously, 'According to one very knowledgeable source in the industry…' This research will not be published, not only for the privacy of the participants, but also to protect any proprietary information that may inadvertently make its way into the thesis, such as discussion of our virtual platform structure or how essays are scored. No data will be published that singles out individual characteristics, such as race, age gender as this is not relevant to the study.

Data Storage and Disposal - All handwritten interview notes are kept in a locked desk drawer in possession of the researcher. Only the student investigator has access to the interview notes. All data collected is kept on the researcher's personal computer and will be destroyed after 5 years from the date of the close of the study.

3.7 Limitations

This study contained the same limitations typical of what you would expect in a doctoral thesis. As Zuber-Skerritt and Perry (2002) point out, one must be careful of the budgetary and time constraints involved in a thesis research. As there was no budget for this project, I was not able to provide compensation to my participants for their time. This also means I had to finish at a much quicker pace as too much time could take a toll on my own budget. Additionally, as mentioned throughout this thesis, several alternative explanations could have been examined. For instance, cost analysis of the technology we use relative to the benefits of higher production levels could have been studied or included in this study. Though this is certainly a worthy question to delve into, it remained outside of the scope of this study for two main reasons. First, I do not have the technical knowledge to examine the back end usage of these technologies (i.e. I do not have the technical expertise to determine the maintenance of software technology). Likewise, even if I did have the knowledge, I do not have the authority to enact changes at that level in the organisation. So, budgetary concerns, time constraints, and lack of technical knowledge and authority were some limitations I was forced to confront when crafting this study.

3.8 Conclusion

Indeed, much thought had gone into the crafting of this research methodology and overall design. Many times throughout the course of crafting it, I had shifted my thoughts and ideas to come up with the final product. Sacrificing my own world views in order to compile the necessary information for my organisation was perhaps the most challenging aspect of the project. Indeed, moving from a background where quantitative analysis was emphasised to a project where the qualitative is the prevalent methodology was a difficult shift to make. And

perhaps most of all, changing the style of my writing to better suit the requirements of reflection and reflexivity for this thesis, from 3rd person to 1st person accounts, was quite frankly at times maddening for the scholar in me. I was forced to seriously question my background in this viewpoint, was it my American education? Was it the institutions I attended? Was there a bias in top level journals and publications? I came to the conclusion it was a combination of all of the above. Nevertheless, I am ultimately glad I broke from that confining mould and have discovered a whole new way to approach research, express myself as a scholar, and implement new skills into my research projects.

I am also certain this design is a perfect match for the purposes of this thesis in terms of selecting the case study and thus, in-depth interviewing for initial data collection and mini-dialogues for Action Cycles. In having to contemplate which design was best suited for my research question I was forced to consider many alternatives. In doing so, I have broadened my understanding of research in general. The next chapter, Data Analysis and Findings, of this thesis does just that in an attempt to explore these gaps and answer the overarching research question at the heart of the matter; which are the most efficient and productive technologies of communication and frequency of communication in my virtual workplace?

Chapter 4

Data Analysis and Findings

Just as the research design draws an overarching map as to the structure and procedure through which how a research project is carried out, the process through which the data that has been collected and analysed is equally important for the validity, accuracy, reliability, and quality of the study at hand. Creswell (2013b) defines qualitative research as beginning…

> '…with the assumptions and the use of interpretive/theoretical frameworks that inform the study of research problems addressing the meaning individuals or groups ascribe to a social or human problem' (Kindle Location 1094).

He maintains, in order to accomplish this, the researcher…

> '…uses a qualitative approach in a natural setting sensitive to the people and places under study and a data analysis that is both inductive and deductive and established patterns and themes. The final report includes the voices of participants, the reflexivity of the researcher, a complex description and interpretation of the problem and its contribution to the literature or call for change' (Creswell, 2013b: Kindle Location 1096).

Furthermore, he defines 'the process of research as flowing from the philosophical assumptions, to interpretive lens, and on to the procedures involved in studying social or human problems' (Creswell, 2013b, Kindle Location 1098).

In this chapter, I use Creswell's (2013b) description of qualitative data analysis above and break down the process I employed in order to bring the philosophical and theoretical assumptions to the reality of my workplace and evaluate the data compiled from this study into digestible outcomes in relation to this project. Here, I discuss the interview process and data collection, the process of thematic analysis employed, and how it was coded, interpreted, and analysed, and the outcomes it yielded in relation to the research question, *What is the optimal amount or frequency of contact and communication that we should be adopted to improve the quality and quantity of scoring production?* Additionally, throughout each phase of the analysis,

I reflect upon myself as a researcher providing insight into my own experiences throughout the research process.

4.1 The Interview Process and Data Collection

As soon as I received permission from the ethics committee at the University of Liverpool, I arranged to be placed in a cohort group as a Leader for my prescribed interview period. As our business is largely seasonal, the timing of this project was important. The vast majority of college applications are due after winter break for classes to begin in the fall semester. Therefore, the bulk of our workload begins in October, hits its peak around winter break, and drops significantly by April. The project would begin in October and end well before seasonal production numbers are expected to drop.

As it was the busy season I was assured to have a full group of 15 Readers. I emailed my group the request and necessary consent forms (See Appendix C). Of the 15 sent out, I received 13 positive responses of participants interested in contributing in the study. The remaining 2 group members indicated that they felt they might not be able to participate fully due to commitments outside of our workplace and thus, opted out of the study. As mentioned earlier, I had no authority to place particular participants in my virtual team, and thus this was not a purposeful selection of participants. I did manage to get permission to arrange for the same group to follow me throughout the duration of the study. This is not usually done as we regularly rotate schedules and groups randomly by the auto-scheduler, but I was granted this request. Nevertheless, I was pleased to find that the group, for not being purposefully selected, was indeed diverse (See 4.1 for Anonymised Participant List for details). The ages of the participants ranged from 26 to 79 years. This was relevant as age could influence technology usage and preferences (Czaja, et al, 2006).

Gender participation was about even having 7 females and 6 males participating. Gender has been found to influence preferences, particularly in systems thinking (Nagahi, Hossain, & Jaradat, 2019) so a gender divide had the potential to provide interesting results. Years of experience also varied, having 1 trainee and several well-seasoned Readers and Leaders. As mentioned in the introduction of this thesis, depending upon when an employee was on-boarded would make a difference in terms of their familiarity with colleagues and with HQ leadership. When my organisation went through several phases of introducing technologies throughout the years, in person, face-to-face meetings were phased out. As a result, those of us with more seniority have met and socialised whereas the newer employees only had online interaction and this would make a difference in their level of familiarity with the organisation as a whole. As our community became more virtual, the less socialisation one received but the more emphasis on virtual technology skills were sought in the newer employees. So a potential divergence of opinions here could be telling.

The diversity of participants does not surprise me as due to the nature of our work diversity is an absolute must. As we have clients from all over the world and diversity of readership is most likely a contractual obligation on behalf of the organisation to ensure equity in scoring. One notable exception concerning this particular participant group's diversity involves the academic disciplines they originate from. Overwhelmingly, they belong to the humanities which includes language arts. Some belong to the social sciences, and only 2, as in my case, originate from the field of business. All of the people in the group, by virtue of the requirements of the position, have taught for credit at the university level in their field. The level of education obtained slightly favours a Master's degree with 8 while 5 participants hold Doctoral degrees. Most of the group is composed of those who also serve as Leaders while only 5 are Readers

only. This is displayed in the demographic data in Figure 4.1 Anonymised Participant List below.

Figure 4.1 Anonymised Participant List

Participant	Gender	Age	Years of Experience	Education*	Academic Discipline**	Position***
P1	F	26	Trainee (< 1)	M	H	R
P2	F	35	7	M	H	L
P3	M	48	3	D	SS	R
P4	M	75	14	M	H	L
P5	F	52	12	D	H	L
P6	M	79	17	M	H	L
P7	F	45	12	M	H	L
P8	M	39	4	M	B	R
P9	F	63	11	M	B	L
P10	M	59	5	D	SS	L
P11	M	33	3	D	SS	R
P12	F	49	12	D	H	L
P13	F	48	4	M	H	R

* M=Masters D=Doctorate

** B=Business; Accounting, economics, finance, management, marketing
H=Humanities; Art, history, languages, literature, music, philosophy, religion, theater
STEM=Natural and Applied Sciences; Biology, chemistry, computer science, engineering, geology, mathematics, physics
SS=Social Sciences; Anthropology, education, geography, law, political science, psychology, sociology

*** L=Leader and Reader R=Reader only

As Creswell (2013b) suggests, the interviews, took place in our natural setting, in this case, via telephone at our homes. The questions contained in the interview guide were open-ended as illustrated in Figure 3.1 of this thesis. The interviews lasted up to 30 minutes. Due to the legal issues concerning recording telephone conversations, the interviews were handwritten throughout the interviews. I took advantage of the handwritten recording style by making notes in the margins concerning pauses, sighs, or any other indicator I could grasp to aid me in

directing the interview in a positive way and extrapolate as much pertinent information I could gather. If at any time during the interview I did not understand anything, whether it be an auditory issue or an issue of content I would wait for the interviewee to complete their thought then ask for clarification. I wanted to ensure I fully understood their thoughts. This was especially true when participants would be contemplating words that meant different meanings to each of them and that could be interpreted differently. For example, when enquiring as to whether Leaders were sufficient in their contact with them throughout the day, this took various contextual meanings for each participant. For some, it was a matter of sheer frequency while for others the wording took on the meaning of whether they were supportive enough in their content for the Reader to feel sufficiently aided by the Leader. When this would occur, I would redirect the question and clarify my meaning in order to gain consistent responses throughout the participants in their meaning and context, though I did keep track of both responses and integrate them into the data.

Throughout the interviews I tried to maintain the semi-structured format as much as possible, being open-ended but yet directing enough to stay within the confines of the interview contents. Nevertheless, at certain points, the interviews seemed to take a more freestyle, or dialogic, format (Harvey, 2020). This was possibly due to our familiarity as this seemed to have occurred with more senior members of the group. I had met several of the participants in person for years at our face-to-face scoring events prior to us going online permanently. This familiarity lead to occasional back and forth dialogues similar to an open conversation. Though I redirected as much as possible and as soon as possible, I did not feel these moments were necessarily a damaging component of the interview process as they were part of the natural ebb and flow of interaction and these moments allowed for the participants to relax and feel at ease. We would

then easily pick up where we left off and I found during these incidences, the information gleaned was much more genuine and in-depth.

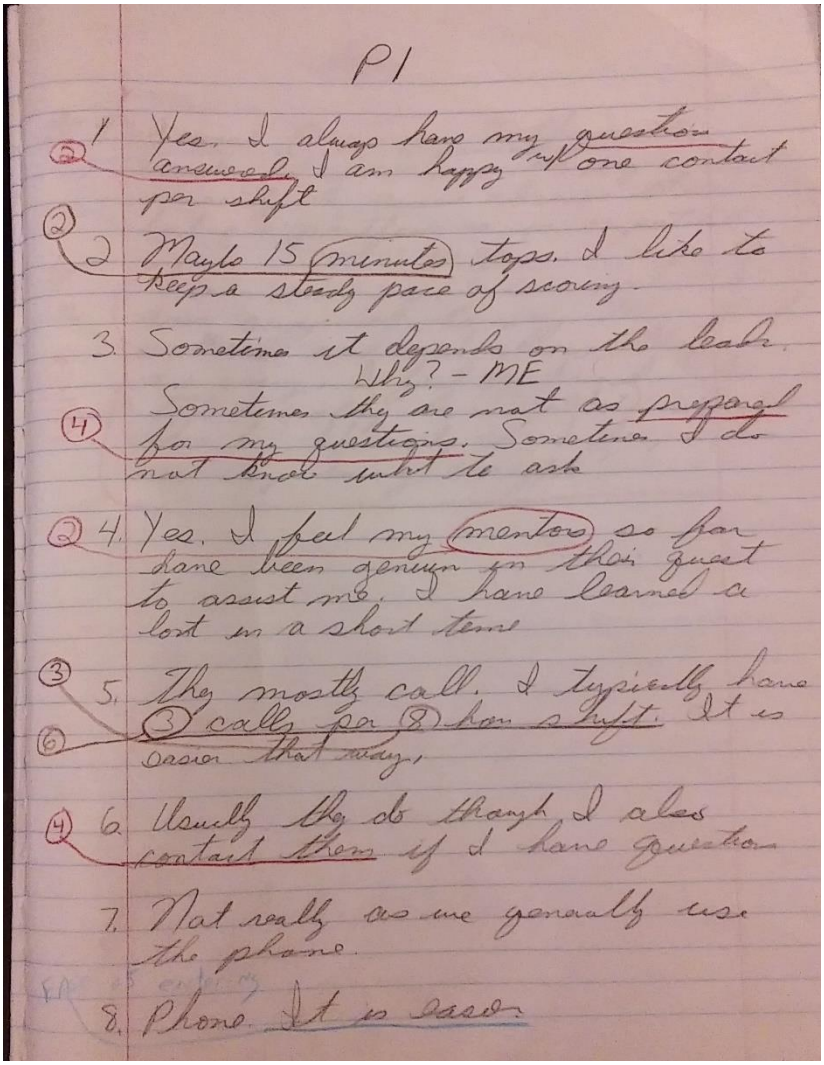
As the interviews were coming to a close, I would lighten the mood and remind them that there would be a few follow-up interviews in the coming weeks and that anything said in the interviews would be held confidential. Of course, they were also reminded that if they wished to contact me, they were more than welcome to bring any concerns they had. I reiterated my contact information to them and thanked them for their participation.

4.2 The Data Analysis Process – Applied Thematic Analysis and Coding

According to Caulfield (2020), thematic analysis is a good way to delve into a particular group's opinions, knowledge, or experience in the form of qualitative data, such as semi-structured interviews. He outlines a six-step process that for the most part is the most widely accepted formula for thematic analysis (Caulfield, 2020; Harvey, 2020; and Creswell, 2013b) which includes; Familiarization, Coding, Generating Themes, Reviewing Themes, Defining and Naming, and Writing Up.

As the initial phase of the data analysis is familiarization, repetitive examination of the data was in order. Once I became very familiar with the significant portions of the data in relation to the original categories and themes provided by Hyrkkanen, Nenonen, and Axtell (2016), I began to code the data using coloured pencils. Each Experience Category was colour coded as follows; Frequency – Brown, Atmosphere – Orange, Familiarity – Blue, Functionality – Green, and Leadership – Red. I first coded the lengthier and what appeared to be the more robust responses as this would potentially yield the most codes or at least possibly provide the deepest most explanatory meanings. Each code was numbered and circled to correspond with each code per Theme. See Figure 4.2 below for a sample of the data illustrating this method.

Figure 4.2 Sample Data and Coding Illustration



Above illustrates a sample of the data from P1. Here, colours correspond with the Themes and the circled numbers correspond with the codes. For example, the response for question 4 includes the mentioning of "mentors". The theme Leadership is red and "Mentoring" is #2 in the Leadership codes. This was done with all interview responses to produce the statistics discussed demonstrating the frequency of each response throughout the results of the in-depth interviews. This technique allows for the frequency of codes to be noted per participant (indicating importance to the individual) as well as frequency across participants (indicating collective importance).

Again, keep in mind that this method was possible due to the small number of participants and relatively few questions contained in the interview. The colour pencil outlines in the notes allowed for a great deal of familiarity and visual indicators (which suits my personal tastes as a researcher as I am a visual learner). Percentages were used where relevant and necessary to illustrate major findings. Figure 4.3 below displays the Initial Themes Template

Figure 4.3 Initial Themes Template

(Based on the theoretical framework and observation, a priori)

Experience Category	Themes	Codes	Examples
Frequency	Use of time, sense of time in the place.	1. A long time 2. Hour 3. Minute 4. Waiting	*In waiting for a response, I was automatically logged off. I lost all of my work.*
Atmosphere	Sense-experience of the place, sight, and hearing	1. Pop-up 2. Window 3. Interface 4. Audio	*I was constantly distracted by the new chat window.*
Familiarity	Ease of entering and using the place.	1. Login 2. Error 3. Instructions	*Our system login often times produces an error message. I know no error exists, but I still am locked out for a considerable amount of time.*
Functionality	Ease of operating in the place for achieving the purposes of the session.	1. Unfamiliar 2. Crashed	*When the site gets updated too frequently, I become uncomfortable and feel lost.*
Leadership	Ease of communicating and gaining information.	1. Leadership 2, Mentoring	*I used to be able to use my discretion when reporting Reader rates but with the new indicator, I cannot.*

Source: Hyrkkänen U., Nenonen S., & Axtell C. (2016). 'A tool for assessing user experience of fit of a virtual workplace. In: Lackey S., Shumaker R. (eds) *Virtual, Augmented and Mixed Reality.* VAMR 2016. Lecture Notes in Computer Science, (9740). Springer. And modifications by author.

After re-examining the results, I added the unexpected codes gleaned from the interview responses to the a priori codes in the Initial Themes Template. See Figure 4.4 below for Final Themes Template.

Figure 4.4 Final Themes Template

(Based on Theoretical Framework, Observation, and Interview Responses)

Experience Category	Themes	Codes	Examples
Frequency	Use of time, sense of time and time in the place.	1. A long time 2. Minute 3. Hour 4. Waiting 5. Quickly 6. Repetition 7. Redundancy	*In waiting for a response, I was automatically logged off. I lost all of my work.*
Atmosphere	Sense-experience of the place, sight, hearing.	1. Pop-up 2. Window 3. Interface 4. Audio 5. Performance indicator	*I was constantly distracted by the new chat window.*
Familiarity	Ease of entering and using the place.	1. Login 2. Error 3. Instructions 4. Incompatible 5. Platform	*I want to use my IPhone to work. It is common at my university to access classes there, but out platform does not allow it yet. It is incompatible.*
Functionality	Ease of operating in the place for achieving the purposes of the session.	1. Unfamiliar 2. Crashed 3. User end 4. Site updates 5. Support 6. HQ announcements	*When the site gets updated too frequently, I become uncomfortable and feel lost.*
Leadership	Communication and the ability to access.	1. Leadership 2, Mentoring 3. Experienced 4. Feedback	*I had 3 essays waiting in the queue so I could not continue scoring until feedback was provided. This is an annoying and unnecessary inefficiency.*

Source: Hyrkkänen U., Nenonen S., & Axtell C. (2016). 'A tool for assessing user experience of fit of a virtual workplace. In: Lackey S., Shumaker R. (eds*) Virtual, Augmented and Mixed Reality*. VAMR 2016. Lecture Notes in Computer Science, (9740). Springer. And modifications by author.

All Experience Categories picked up additional codes after this exhaustive examination of the data. Frequency, for example, added 3 more codes, all descriptive of time, such as "quickly" or "repetition" in reference to "sense of time" in the place.

Being this was the first time I had engaged in this type of data collection, certain elements of the process seemed a bit vague. For example, how long should one examine and

reread the notes? What is a sufficient amount of time or passes through the material to make certain one is thorough in their examination? How is personal familiarity with material measured? Where does familiarity with participants come into play here and does being familiar with my participants make determining this threshold more or less difficult? Ultimately, due to the time constraints of the thesis deadlines, I would not have the luxury of determining on my own exactly when I as a researcher would be fulfilled in terms of data familiarity. These questions and limitations would directly impact my coding as I had to make these determinations within a prescribed timeframe. Again, since time was of the essence, I had to rely upon my own instincts to compile themes and codes upon demand. Of course, this was also in conjunction with a solid understanding of the literature. Therefore, the themes were based off of an in-depth review of the literature in conjunction with my own experiences in the organisation. I felt this approach was necessary particularly in the scholar-practitioner role. As an insider, I would be privy to what is important to the participants since I also perform the same tasks they do in the organisation. As a researcher, I would be informed by the literature and would have obtained educated estimates of what others have found to be key elements in this area of research. Again, this was a different approach to research than I had been accustomed to as an economist, yet I found the role simultaneously liberating and challenging. Time was on the essence and I would estimate it took no more than 2 weeks to move from my a priori codes to the finished codes. The issue of time is something that did not occur to me when initially planning this type of research and should certainly be at the forefront of any potential future research of this nature.

As I had mentioned earlier in the interview process, I was not particularly strict in terms of keeping the semi-structured tone as the participant would sometimes the interview would slip into a more dialogic tone, with some participants becoming a bit more open in their responses. This seemed at the time to be an acceptable way to proceed as it was making the interview flow

more easily and freely. Nevertheless, when it came to coding these types of interviews along with those that remained in the semi-structured style, I was forced to find a solution on how to deal with this discrepancy in the notes. Fortunately, Mod U (2016) had a great suggestion when dealing with this. They used the example of when a participant would recall a memory and add that to the discussion and suggested when this happens to keep in mind the research question as a primary focus to be able to more easily glean the important points. Even though a past event might have been interesting or related to the topic, it may not be germane to the research question posed and it can be eliminated through the coding process.

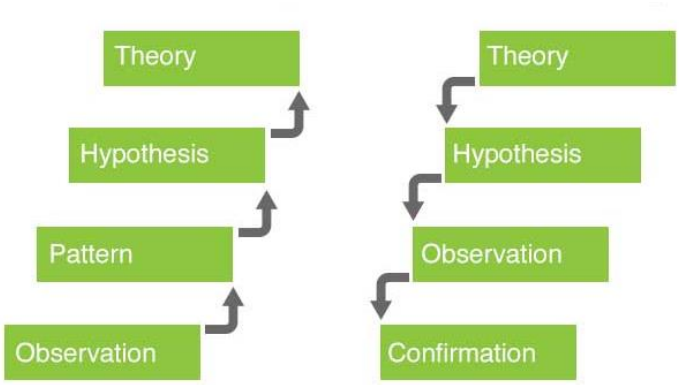
In my previous and very limited exposure to qualitative research, I was exposed to the implementation of different types of Computer-Assisted Qualitative Data Analysis Software (CAQDAS) qualitative software. These, however, were for very widespread studies that involved thousands of participants across large geographic areas. The data collected for these particular types of research projects were government-funded and involved large groups of both participants and researchers alike. Due to my familiarity with some of these programs, I was at first tempted to use one for this project. After considering this, I decided against it and opted for a more simple less technical method. Indeed if the number of participants was significantly higher or the set of questions and subsequent interviews lengthier or repetitive over time, the use of such software would have been appropriate. Ultimately I concur with Creswell (2013b) in that the quality, depth, purpose, and support from the literature and observations outweigh quantifying this type of in-depth interview data.

Another related issue concerned the three major theme-based approaches to qualitative analysis and involved the philosophical underpinnings and exactly what type of data I was looking to produce. While phenomenology focuses in the human experience and grounded theory uses a multitude of data sources to build themes found throughout the data, both take a

subjective lens in their analysis (Guest, MacQueen, & Namey, 2012). Applied thematic analysis 'Identifies themes in text. Themes are transformed into codes and aggregated in a codebook and can be used to build theoretical models or to find solutions to real-world problems' (Guest, MacQueen, & Namey, 2012:p.65). Due to the potential quantifiable nature of the coding, applied thematic analysis can be considered positivistic in nature (Guest, MacQueen, & Namey, 2012). Here, Creswell (2013b) cautions the researcher not to become overly concerned with the quantitative results throughout the coding process, hence, they run the risk of sacrificing fewer but perhaps deeper and more in-depth points for frequently mentioned points conveying less significance and thus adding less value to the findings (Creswell, 2013b). Again, I concur with Creswell (2013b) on this point and in my reporting, both due to the nature of my research question (seeking participant feelings and belief) as well as the number of participants only reaching 13, I resist overly engaging in the quantitative coding results and rely more heavily, though granted subjectively, on my own instincts when compiling themes and codes for this project and ultimately on compiling the results. I ultimately feel the approach should match the research question at hand and in this case, applied thematic analysis applying abductive reasoning is the optimal approach for analysing the qualitative data of this project.

Typically when performing data analysis and using a theoretical framework as a guide to influence themes, deductive reasoning is applied (Caulfield, 2020). As illustrated in Figure 4.5 below (Elmansy, 2016), inductive research starts with a research question and the gathering of empirical data which then form a hypothesis and theory (Canary, 2019). Deductive research, on the other hand, begins on the opposite side of the spectrum beginning with a theory, generating a hypothesis which then, in turn, guides data collection and analysis (Canary, 2019). This figure illustrates both of these approaches to reasoning are one-directional, that is, like steps, they represent a linear path of logic (Elmansy, 2016).

Figure 4.5 Inductive vs Deductive Reasoning Comparison in Research

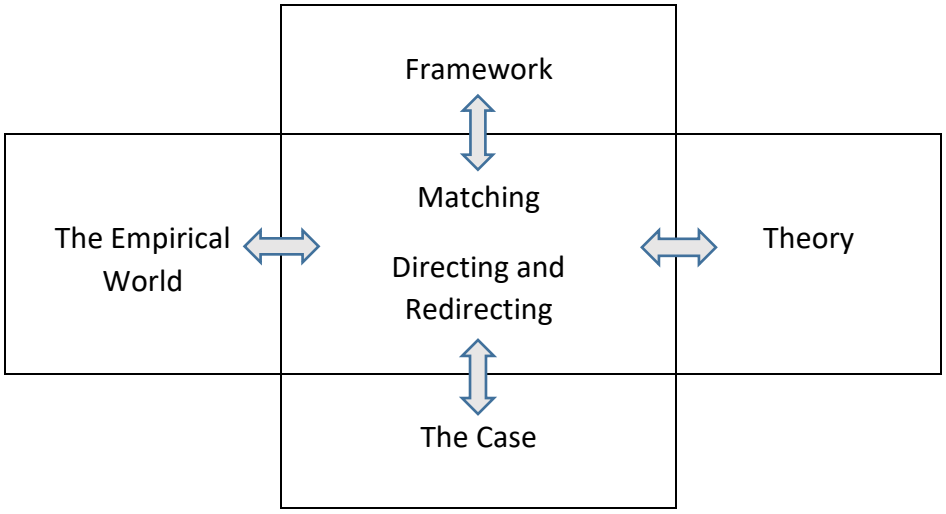


Source: Elmansy, R. (2016) 'Using inductive reasoning in user experience research', [Online]. Available from: www.designorate.com/inductive-reasoning-in-user-experience-research/ (Accessed: 20 March 2020).

Creswell (2013b) advocates for qualitative researchers to engage in a more nonlinear approach to qualitative research. He argues that a more 'inductive-deductive logic process' allows for more complex reasoning to take place (Creswell, 2013b: Kindle Location 1456). Figure 4.2 below (Dubois & Gadde, 2002:p.555) illustrates the nonlinear pattern in analysis where abductive reasoning can flow in multiple directions and be redirected when required. Here, Weick (1979) argues that if there is no latitude given to the researcher to draw conclusions where no concrete answer can be solidly concluded, by following a linear pattern of logic, the researcher may indeed have pointless or illogical conclusions. He suggests remaining open to interpretation drawing on a combination of theory, data collected, and observations to come to more reasonable conclusions when interpretation is required (Dubois & Gadde, 2002; Weick, 1979). I found this particularly useful when attempting to answer a question that has not been posed before or where both theory (and theoretical framework) and data are untested or are uncertain (Creswell, 2013b). Additionally, I felt this latitude would be most useful and even necessary when engaging in the iterative process due to the nature of this type of qualitative

analysis. As such is the case in this research, abductive reasoning was employed as illustrated in Figure 4.6 below.

Figure 4.6 Abductive Reasoning in Research



Source: Dubois, A. & Gadde, L.E. (2002) 'Systematic combining: an abductive approach to case research' *Journal of Business Research*, 55, pp. 553-560. [Online]. Available from: https://mycourses.aalto.fi/pluginfile.php/906035/mod_resource/content/2/06_Dubois%20%20Gadde%202002%20.pdf (Accessed: 20 March 2020).

The next section provides an analysis of the interviews and an evaluation of outcomes using the voices of participants, reflexivity (or my own take on the data), a description of the question posed, and the resulting call for action (Creswell, 2013b).

4.3 Findings of In-Depth Interviews – Evaluation of Outcomes

This section includes the findings of the in-depth interviews as part of the Thesis Action Research Section of this project. It is divided according to each of the 5 themes derived from theoretical framework, observations, and later revised with the input from the raw interview data collected. These themes include; Frequency, Atmosphere, Familiarity, Functionality, and Leadership. The original a priori themes and subsequent codes along with the Final Themes Template and codes can be found in Figures 4.3 and 4.4 above respectively.

4.3.1 Theme 1 – Frequency

Frequency here refers to the use of time or the sense of time in the place. Time is valued in my organisation and has a great influence on efficiency, and thus production. Until recently, rate of reading was not a significant factor in Reader performance. Rather, accuracy was considered the gold standard and the value of the employee. Currently, reading production rates have been included in evaluations of each Reader and speed is now part of the portfolio of a Reader. Taking this even further, a 'performance indicator' has been added onto the platform so that a Reader can monitor their own progress in terms of rate of production and accuracy relative to pre-scored essays. The suggested reading rate is 17 essays per hour though in reality, this largely can be influenced by the type, or batch of essays, that are in the queue for the day. For instance, batches of essays containing a high percentage of essays written in countries where English is not the primary language tend to be much shorter or fall easily into a category of essays that are deemed a lower score. These are quickly read and easily identified. On the other hand, those essays that originate from countries where English is spoken widely tend to have more lengthy and complex responses requiring more time dedicated to reading them and evaluating them. These essays will more often than their English as a Second Language counterparts require a discussion, a hold, or even a deferral if the essay brings the test question and it's meaning to light. With the introduction of the new time/rate performance indicator, Readers are more aware of their performance in real-time, and thus, time and participation become key to their evaluation results and portfolio performance. Arguably, time and efficiency are at the heart of this balance between production quality and quantity. When asked about time relative to communications, the responses differed in terms of priority.

'I do not like to be held up in production. I will place the essay in the hold queue and write my remarks there. If I have a question or the matter is serious enough to warrant contact, I

will stop and contact my Leader if necessary. I do not dislike contact, but unless it is necessary, I prefer to continue reading without interruption'. (P11)

When pressed to elaborate on this feeling, P11 clarified with

'Sometimes Leaders can be rude. Almost take a condescending tone if you have a question. I only do this part-time. I do not feel the need to be belittled, especially if I am trying to take pride in my work' (P11)

Though this response is in line with Wang et al's (2009) call to be mindful of language when engaging in distance and virtual work, I pressed further and enquired if this was a reoccurring theme and did he always feel this way when talking to Leaders. He responded with

'No. Actually, it is not usually like that at all. I guess after my negative experience I want to avoid any future conflicts. I just want to do my job.' (P11)

This particular interview was quite revealing on several levels. First, a discussion strictly about technology quickly became a discussion about leadership. This falls directly in line with DeRosa's (2009) argument that regardless of technology, it is the leadership behind the technology that makes it a success in implementation. Secondly, P11 began to express concerns of isolation and felt they had no recourse if there was a negative experience. Was the communication technology actually inhibiting P11's ability to communicate with the corporate office? Was this power separation intentional as McKelvey (2006) might suggest? I had often suspected this managerial separation to be intentional and very much at play in our organisational structure. For example, our technology is structured in such a way that is not only hierarchical (i.e. only senior members can directly contact HQ) but also colleagues cannot communicate with each other. Unlike many other organisations, mine is one where not only are virtual participants on the periphery, but they are isolated on the periphery. So, if a Reader had an issue with a Leader there is no way for them to reach out to senior corporate leadership to

make a complaint. I do understand the argument that scoring essays independently is at the core of our function (two faculty members independently grade the same essays and a final score is determined). Nevertheless, there are other organisational matters, such as possibly bullying, miscommunications with Leaders and so on that might warrant attention, yet there is no avenue available to express these issues.

P11 was not the only participant to express issues of time and leadership interaction. P8 expressed concern about Leaders and their role in production quality.

'When I am sent feedback in the queue I start to feel anxiety. More often than not, feedback is always negative. I understand the need for constructive criticism, but it is as if it is a constant stream of negativity. I feel that I can score 100 perfectly, then if 1 slips through the cracks that is the one I hear about. It is like I am not appreciated after a while.' (P8)

I followed up with 'So what is your typical response after an incident like this? What do you do? Do you contact your Leader for more information?'

'No, I tend to just continue on.'

I enquired as to why and P8 simply remarked 'I don't want to rock the boat.'

These two interviewees have two things in common, both are fairly newer to the organisation and both are not Leaders. This means they have never been to a Leader meeting and they have never had the opportunity to attend a face-to-face meeting as these have been cancelled and these participants are recent hires. I find the theme and importance of leadership resonating here. As I had mentioned earlier, Leaders are increasingly becoming the only contact for the majority of the employees in the virtual teams. It should be interesting to find if technology could play a role in remedying this gap or disconnection among these newer employees. Again, these incidents could also be a case of isolated incidents or poor leadership and not being engaging, inclusive, or collaborative as many suggest (Raelin, 2010).

Nevertheless, it is clear from these excerpts that leadership plays a tremendous role in frequency related to time and interaction. If Readers are not willing to engage, then time (in the form of errors and read-overs) is wasted and both efficiency and accuracy drop. If leadership is not up to par other important facets of virtual communications, such as frequency of communications, cannot compensate for this deficiency. In another telling response relative to frequency, when P3 was asked whether he felt Leaders communicated frequently enough, he replied

'I put a Temp Hold in the queue. In waiting for a response, I was automatically logged off. I lost all of my work." (P3)

This is reminiscent of Liao's (2017) point about leaders being responsible for the efficacy and utility of technology. This is also related to Eisenberg, Post, and DiTomaso's point concerning distance impacting the efficacy of leadership and interest of the leader having the potential to decrease over distance (2019). Ultimately, frequency is determined by the quality of leadership. If leadership is looked upon as a positive experience, Readers will reach out more frequently. If not, they will avoid contact which could be detrimental to productivity and accuracy.

4.3.2 Theme 2 – Atmosphere

Atmosphere refers to the sense-experience of the place sight, and hearing. Since technologies play a crucial role in how communications are engaged in throughout the virtual workplace, it stands to reason that how they interact with that technology is also a vital component in maintaining continuous productive communications with leadership. Does the virtual atmosphere aid in the virtual communications of employees? Throughout the years we have had many changes concerning our online platform. Features are often added and deleted. Some are welcome much more openly while others are resented or rejected. When asked about

whether the platform or subsequent technologies facilitate communications, their responses were quite mixed as were their rationales for why they felt the way they did.

'I was constantly distracted by the new chat window. Rather than providing a subtle indicator there is a new message, it pops up onto the screen. It breaks my train of thought when reading. There is no need for that! I will get back to you!' (P7)

'I use chat often as it is the most convenient way to reach my Leader. I do not like leaving the platform.'(P8)

The issues raised here are conducive with the literature concerning usage issues in the virtual workplace in their quest to understand efficiency in employee performance. Rice et al (2007) concluded it is process that creates efficiency much more so that technology or interaction, but the organisation of it that increases efficiency in the long run. This seems to be the case here as no one in the group expressed negative experiences with the function of the chat itself. Rather, if anything, it was the interface with chat that was at issue here. This seemed to deter communications rather than the actual utility of the chat, which gained positive feedback.

'I do not have any issues with the platform. I do wish we could text' (P8)

'I know we have much more technology today and I enjoy using the chat for its convenience, but I still prefer to call people at least once a shift when I am Leader. I also like receiving feedback regularly when I am reading, so the new chat is convenient for that.'(P6)

These two responses seem to conflict. Here the question becomes whether these responses illicit personal preference as Clear and MacDonell, (2011) would argue or do they have a deeper meaning? It is noteworthy to point out here that there is a significant age gap between these two interviewees. Though age has historically been show not to play a significant role or at least any negative indication of technological preference and usage (Rizzuto, 2011; Czaja et al, 2006) this is nevertheless an interesting find here as it may or may not directly

impact preference in my department. Also, their years of employment indicate that they entered the department at very different times; one when we were still meeting in person and were more familiar with each other on a personal level and the other when we only met and worked with each other online. This might explain the difference in technological preferences and the desire for more interpersonal contact, such as verbal/telephonic communications.

4.3.3 Theme 3 – Familiarity

Familiarity was surprisingly a strong theme throughout the responses. Here, familiarity or the ease of entering and using of the place was concerned. The overarching meaning of this theme took on several interpretations. Here it was my initial intent that this theme generally be in reference to the ease of use of the current platform. However, when participants were asked about what technologies they prefer to use with their Leaders, they included several other ideas and this diversity of interpretations widened the theme's scope. For example, one participant was concerned about expanding the technology.

'I want to use my IPhone to work. It is common at my university to access classes there, but our platform does not allow it yet. It is incompatible.'(P1)

Another complained about a common occurrence when logging in and out of the system.

'At times I cannot log into the system because I get the 'turn on pop ups' error. Then, I cannot log off because it holds on to the browser. I called tech but they explained it has something to do with security measures. I called several times, but they never fixed it.' (P4)

And finally, another issue immerged in terms of familiarity and ease of use. P5 noted

'Our system login often times produces an error message. I know no error exists, but I am still locked out for a considerable amount of time' (P5)

Here, it is possible that not just the preferences of the individual, but also the skills of leadership are important (Morley, Cormican, & Folan, 2015). This is also indicative of a lack in communications with corporate offices. These team members are reaching out and not getting a satisfactory response. This could lead to apathy in the workplace which in turn leads to low productivity (Lipnack & Stamps, 2000). Issues with the platform indeed are causing difficulties and delays in communication.

4.3.4 Theme 4 – Functionality

When the participants were asked about whether technology played a role in the rate of their production, the overwhelming response was in the affirmative. The term *communication technologies* refers to the greater technology employed to conduct communications, such as the internet, telephone, or monitors and video screens (Szpak, 2020). *Communication platforms* refers to the specific software used to facilitate the communication, such as Skype, Dropox, Google Drive, and the like (Rauv, 2017).

They believed it was directly related to their performance. The reasons they provided, however, were varied across the board all were apparently justified and backed by the literature. Interestingly, there was a gender divide in terms of functionality as the vast majority of males responded positively to believing technology directly impacted their performance while female responses were mixed. This concurs with Gheni's et al (2016) findings of gender perceptions.

When prompted as to why P4 was happy to see the indicators, she replied

'I am pleased to see we have a performance indicator now. Before I would get random calls or contacted for no reason. Now, the indicator is there to prevent unnecessary discussion. If the indicators are good, I know they will not call and I do not like interruption' (P4)

Perhaps here this indicates work style preference (Huang, Kahai, & Jestice, 2010) rather than technological usage. As Huang, Kahai, and Jestice (2010) point out, some prefer to remain independent workers others prefer more interaction and collaboration. Here, the technology may be putting up a barrier to unwanted communications, whether this is beneficial or detrimental remains to be seen as either results, negative or positive, could be achieved.

Others, when asked about whether technology impacts their production included the difficulties of the system itself apart from the interface. This again, is directly linked to the technical team. For example, when P3 was asked, he responded with

'I was automatically logged off and the down time gave me a gap in scoring.' (P3)

P5 felt that the system was unreliable in terms of functionality and it reflected badly upon her performance

'The system, as you know, 'plays favourites' and inexplicably give some of us a poor connection to the servers – at least that is how it was explained to me. Even though we can get a tech ticket, it still makes us look bad and our production goes down. They need to fix the servers' (P5)

P7 felt this was a direct impact on her ability to perform her tasks

'Yes, when the system is slow I become distracted…like I lose my groove and focus. It is hard to get back and that is when I take my break hoping that it gets back to normal before I return' (P7)

Clearly, technology and its functionality are at the forefront in terms of impeding production when gone wrong. For this theme, technology took a broad meaning. Additionally, the responsibility of the results were shared by both Leaders and the quality of leadership and guidance they provide as well as the efficacy of our Tech Support Centre.

4.3.5 Theme 5 – Leadership

Leadership, in the context of this theme represents perhaps the most tacit of the themes. It refers to the communication and ability to access Leaders in a timely manner. Leaders are often the only representative of the organisation a Reader will know. And now, the virtual workplace is the only chance they will ever get to interact. Not only was leadership a main theme throughout the interviews, as illustrated above, it penetrated all other facets of the major interview topics.

Though this theme was originally meant to reflect the perspective of Readers, as mentioned previously, those of us who are Leaders also serve on occasion as Readers. During the interviews, several Leaders flipped the perspective of the question and began to speak about their experience as Leaders.

For instance, P9 expressed their concern about losing their autonomy and judgement when discussing Reader performance. She noted

'I used to be able to use my discretion when reporting Reader rates but with the new indicator, I cannot.' (P9)

Indeed, this is of particular importance because the indicator in fact does not display the difficulty or length of a written response. As some papers take longer to read or are more difficult to discern the appropriate grade, Leaders found it frustrating to have their voices taken away from them when exercising their judgement.

Additionally, when asked about Leaders and time interaction and initiation of communications, the responses were somewhat across the board. Some Leaders complained certain Readers seemed less interested in being mentored than others.

P10 elaborated upon this point with

‘I am required to ‘check-in with Readers. We have to do this at least once or twice a shift. When there is nothing to discuss of significance, I know I could be interrupting the Reader. I still have to make contact and write this in the report. I know when I am reading I dislike these discussions without purpose, but what can I do?’

Again, this is a perfect example of a policy meant to benefit both Leaders and Readers potentially becoming intrusive and resulting in a negative impact. This could be an indication of Alvesson and Sveningsson’s (2003) caution against micromanagement particularly in high level knowledge intensive firms (Alvesson, 2004) such as mine.

P1 expressed her discomfort concerning expectations during these calls

‘I am never quite sure what I am supposed to say. My Leader will call me and ask how things are going. I feel awkward when there is nothing to talk about. Should there be? If not, am I doing something wrong or right?’ (P1)

Clearly without definitive purpose, these communications become cumbersome, unnatural, and uncomfortable for both Leaders and Readers. This notion of consistent but purposeful involvement through leadership is reflected in the literature by DeRosa (2009). Indeed, this was a hot topic throughout this interview session. Not only was frequency of contact an issue, but content and purpose were also emphasised. Here, lack of purpose and clarity can muddle the message of Leaders and cause confusion or even worse, apathy.

4.4 Conclusion

In this chapter, the five themes produced from the interview data confirm that indeed production in both quality and quantity can be influenced by technology usage. Each major theme adds new evidence that it is possible to guide the virtual workplace into a more productive

and efficient workspace. The trends offer a complex assortment of findings indicating the solution to the balance of communications and utility of technologies may not be an exact science but that aiming for this goal is certainly a worthy endeavour.

Overwhelmingly, leadership became the dominant determining factor across all themes. The key indicators emerging from each of the major themes and the data are supported by the literature shed light on what actions could be taken to enhance the virtual workplace experience are as follows; 1) Frequency indicated that communications need to be succinct and informative, yet flexible enough to address the problem at hand. In order for this to occur, it is clear Leaders must be approachable and engaging to the needs of the Readers. 2) Atmosphere, or the platform/user end of the technology, had to be diverse enough to accommodate the user while complementing the task at hand. The more user friendly the platform was perceived to be, the more frequent and open communications were. The more difficult or threatening or intimidating, the less communication was sought out or established between Reader and Leader. 3) Familiarity indicated that the technology had to be inviting. That is, regardless of the component being discussed, it had to be useful particularly where time was concerned. Additionally, it was incumbent upon Leaders to ensure that when issues occurred they would support the Readers whether it be due to technical issues or simply changes in format. 4) Functionality here represented a sense of reliability of the technological tools available. If the platform was difficult to use or the communication connections were inefficient as a result, then all indications would lead to down time and lost productivity. Leaders were expected to handle the situation and protect Readers from negative consequences outside of their control. And finally, 5) Leadership, though this particular major theme could almost be considered an overarching theme as its influence reaches across all of the major themes represented here, above all insists upon interest and competence. Leadership must be not only be engaged, but also engaged in the most suitable

manner available. Knowing the users and the technologies and to be able to assist in both practice and content was at the forefront here. And overarching takeaway here involves leadership and its influence on the other major teams. Though each theme has a role to play in production, ultimately, is clear from the data that leadership is plays an integral role and is a determining factor in team performance.

As far as my own internal gain from the results of this study, several points come to mind. Even though this study produced diverse individual responses to the questions at hand, trends were detected in the data that coincided with the literature. These trends produced potential indicators that shed some light on how these outcomes could be translated into real practical solutions for the virtual workplace. Leaders were expected to be helpful, knowledgeable, and supportive. It was not frequency, per say, that gained Readers' trust but rather the quality and leadership abilities in those communications that made the difference for these group participants. Keeping this in mind, I am more aware of the impact of how I choose to communicate with my teams both on an individual level as well as on a team level. For example, understanding that my more seasoned Readers prefer less frequent but more in-depth communication is very useful in maintaining productivity and a smooth shift overall. In addition to my own internal gains, I have also been able to glean several practical recommendations that I am hopeful my colleagues in the greater community of practice can also benefit from in their own leadership styles and practices (See Section 6.2 Recommendations for a complete list).

Clearly, as technologies evolve, the balance of this formula of frequency of communications and technological tools will shift and will most likely be in a constant state of flux. Nevertheless, it is a worthy endeavour to pursue and action research is a well suited vehicle to test, enact, and perfect these changes. In the next chapter, Action Cycles utilising specific

communication technologies are put into action and tested with real data production results in an attempt to ascertain which influence the quantity and quality of production.

Chapter 5

Story of Cycles of Action, Reflection, and Sensemaking

Action research is defined in many ways and finding an agreed-upon vocabulary when discussing the nature of this subject throughout the literature is difficult if not impossible. Ever since the notion of 'field theory' or 'topographical psychology' was applied by Kurt Lewin as a means to demonstrate there was in fact an alternative to traditional management and that relationships could develop between groups and sustain cooperation (Adelman, 1993), action research has been adopted, refined, redefined, sold, and rebranded to suit just about every individual's ideal. Since then, the concept developed from a rather broad and arguably open-ended concept and branched out to become more refined as it was introduced and applied to a wider variety of fields and disciplines, and thus remains difficult to academically pin down into a neatly assembled concept (Adelman, 1993).

For instance, Sagor (2000) sees action research as a process involving the same seven steps; selecting a focus, clarifying theories, identifying research questions, collecting data, analysing data, reporting results, and taking informed action. Here, the notion of exactly what type of data or research methods remains vague. The question can even be posed if action research is a methodology within itself. As Ivankova (2015) astutely points this out when discussing the difficulties of categorising action research in terms of it being a mixed methods approach or is it simply a research paradigm of its own.

Likewise, McKay and Marshall (2002) note the razor-edge distinctions between consulting and action research. Their argument rests on the idea that though both interventions seek to solve real-world problems, action research is distinct in that it also seeks to add to the greater body of knowledge within a particular field. In contrast, they argue that consulting is

done internally and strictly for the benefit of a client (McKay & Marshall, 2002). Of course, this can be disputed as many consultants publish their work and thus in their own way do contribute to the body of knowledge.

One thing is for certain where action research is concerned, it is a multi-step process meant to improve individual and/or organisational practice while producing information that aims to add to the greater understanding of that said practice. For the purposes of this project, the University of Liverpool does not specify or insist upon a particular definition of action research rather they qualify it in the context of the DBA thesis as a '…project [that] should be built around a management, organisational or market context…' and that this enquiry 'might be that you will find a need to gather information and evidence in one of the different stages of a major work-based initiative' (UoL, 2017:p.16).

As seen in the previous chapter, the initial enquiry using interviews was made and findings were gleaned to better understand the optimal amount or frequency of contact and communication that my department should adopt to improve the quality and quantity of scoring production. Once this portion of the research question (or the Thesis Action) was examined, the project became actionable. As previously discussed in Chapter 3 in the Research Design section and as illustrated in Appendix A - Research Design Concept Map, the Thesis Action Research portion of the project the University of Liverpool is alluding to above is now complete and is informing the Core Action Research portion of the project. In this case, the major take away was that participants felt that quality of leadership, not frequency, would ultimately determine their quality and quantity of production. This is a very important finding for my practice and the practice and policies of Leaders across the organisation. As it stands, Leaders, regardless of necessity or inconvenience to the Readers are forced to communicate a certain number of times per shift, even if this is unnecessary, inconvenient, or disruptive to the Readers and could

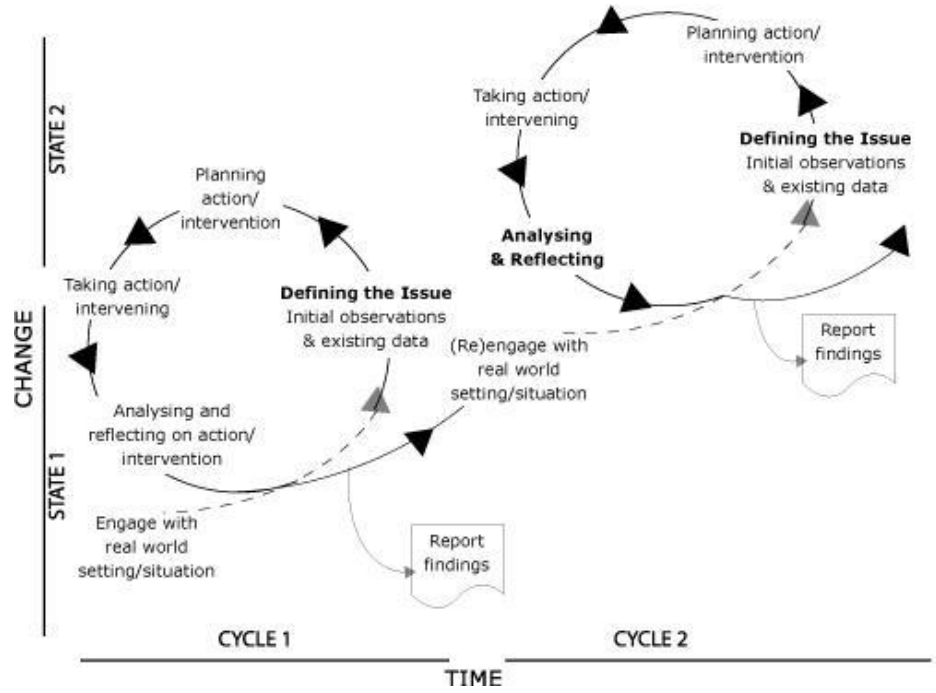
potentially cause decreased productivity. Purposeful, not frequent or voluminous communications is most valued.

Taking this finding into account, the following is a layout of what Core Action Research I took, what were the results of those changes, and what was found in relation to examining what communication technologies/tools available to us improve the efficacy of the virtual workplace and the type(s) of communication via a variety of technological tools impact the quality and quantity of production. Conclusions regarding implications for my organisation and actionable knowledge acquired throughout the process are discussed at the end of this chapter.

5.1 Action Research – Planning, Action, and Results

It is important to note that as many definitions that exist for action research, there are as many concept maps to choose from. Just as it was argued earlier in Chapter 3 Methodology, as the methods should fit the research question, I believe the actions taken should fit the research question and the organisation where the action will take place. After considering several scholarly concepts addressing action research cycles, I selected DeSmet et al's (2018:p.14) Action Research Spiral illustrated in Figure 5.1 below. DeSmet et al's (2018) action research concept involves a 5 step process. These include; 1) engaging with the real world setting, 2) defining the issue utilizing initial observations and existing data, 3) planning action or intervention, 4) taking action or intervening, and 5) analysing and reflecting upon the action or intervention. Once the process is complete, a new cycle of re-engagement begins. This spiral not only serves as a guide to thorough action research practices, but also puts in place a mechanism through which action research can be repeated consistently while installing a perpetual feedback loop that any Leader can participate in and contribute to (an ultimate goal of this project).

Figure 5.1 Action Research Spiral

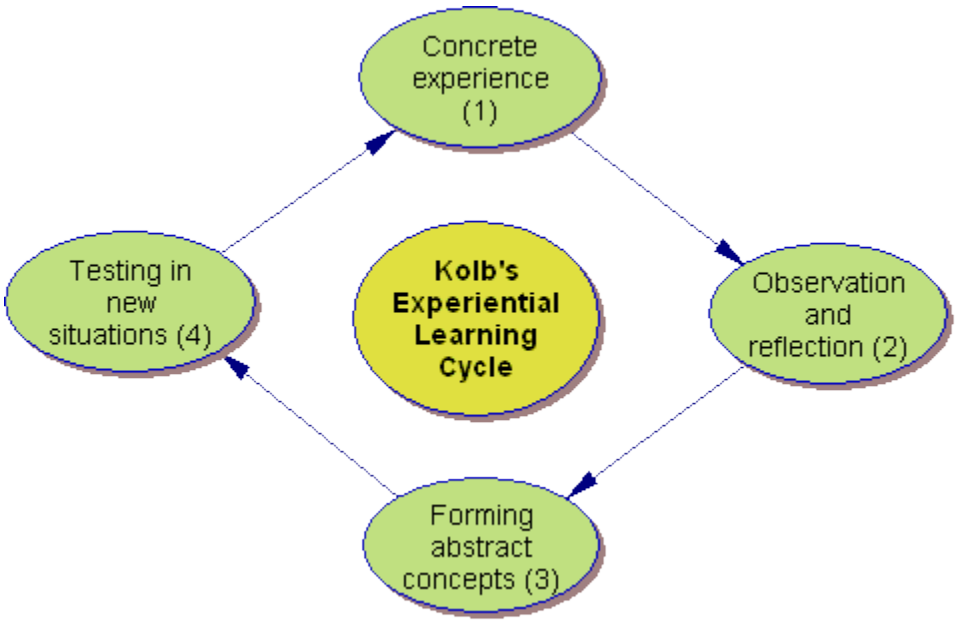


Source: DeSmet, A., Pak, B. & Schoonjans, Y. (2018) A participatory exploration of the potential of urban waiting spaces to increase urban resilience, Proceedings of The Conference for Artistic and Architectural. CARE Research [Online]. Available from: https://www.researchgate.net/publication/328615301 (Accessed on 23 June 2019).

It is important to note that contained within the DeSmet et al's (2018) action research concept, reflection is emphasised as a major component of action research. In order to regulate this process and maintain continuity throughout the reflective phases of the action research itself, I engaged in Action Learning. According to Bourner and Brook (2019) action learning is the reflective process through which action research is informed. This is practically illustrated in DeSmet el al's (2018) 'analysing and reflecting on action' portion of each cycle in Figure 1 above (p.14). In other words, action learning informs action research of the next step in a more scientific way rather than relying completely on instinct or hunches (Bourner & Brook, 2019). I adopted David Kolb's Action Learning Cycle illustrated in Figure 5.2 below. This not only grounds me in practice and demonstrates the 'complexity and subtlety of translating ideas into

action in a particular work context' (UoL, 2017), but it is also helpful in putting forth a foundation of epistemological origins (i.e. concrete experience leads to investigation and enquiry) which can be an elusive concept even though it generates action.

Figure 5.2 David Kolb's Action Learning Cycle



Source: Wheeler, S. (2012) *Recycling Kolb* [Online] Available from: http://www.steve-wheeler.co.uk/2012/06/recycling-kolb.html (Accessed 23 June 2019).

With the information gathered from the interviews, I put together a plan to introduce and test the ideas gleaned from the data. I paired these preferences with the technologies available for our virtual workplace. As we have 4 major communication techniques, I decided to engage each technology with set times for usage. These technologies are Skype, email, and chat. The fourth communication medium is telephonic. I left this medium out as I reserved it for other communications not to interfere with production, such as HQ contacts, Help Desk emergencies, and any other issues that would arise during the course of a shift. After a 1 week period of utilising each technology, a brief informal discussion would take place with each of the group members.

These mini-dialogues should not be confused with formal interviews and should be thought of more along the lines of Marquardt's (2005) concept of leading with questions. Though formal interviewing could occur here, part of the intention of engaging the action research is to attempt to try to get those involved providing input. Formal interviews at this stage are not only impractical but would be antithetical to the purpose of increasing or encouraging interaction, as suggested by such scholars as Raelin (2010) who underscore collaboration and interaction as successful strategies in leadership. These types of projects are based on Lewin's original idea for action research where a cycle of identifying as issue, collecting base-line measures, implementing change, and re-measuring was adopted (for an example of similar action research – or Core Action Research projects, see Koshy, Koshy, and Waterman, 2011:p.22). Rather than a formal examination of data, as in typical interviews, here is where Action Learning comes into play and somewhat formalises my thinking, reflexivity, and reflection of the subject matter while allowing leadership, judgement and experience to influence the presentation and interpretation of questions and responses. Here is also where I exercise my leadership by translating my ideas into action. Along with this informal dialogue, production data were collected to provide some real-time data on the quality and quantity of production throughout the team. Figure 5.3 Mini-Dialogue Guide below, contains the sample questions used. Again, it is here that judgement and experience are used in both compiling the questions as well as interpreting the meaning of the responses and determining what actions are to be taken.

Figure 5.3 Action Cycle Mini Dialogue Guide

Dialogue for Project: Communication Technologies in the Virtual Workplace
Cycles of Action Interviews

Time of Dialogue:
Date:
Place:
Interviewee: P1. P1. P3... (Same participants in the Initial Interview)

Project description: An action research project seeking to investigate the efficacy of various types of technologies and their usage in the virtual workplace. Specifically, how frequency and methods of communication via a variety of technological platforms impact the quality and quantity of production in asynchronous, non-collocated virtual work groups.

Questions:

1. Did you feel your Leader communicates with you frequently enough? Why/why not?
2. Did you feel your Leader communicates with you sufficiently each time? Why/why not?
3. Did you generally feel more prepared and informed to read after communicating with your Leader? If so, why?
4. What did you think of the technology (insert technology here) this week? Was it effective? Why/Why not?
5. Did you feel more productive this week? Why/why not?
6. Did you experience anything different this week in term of your performance? If so, what? Any questions or anything you would like to add concerning your experience with using communication technologies in our virtual workplace?

Source: Creswell, J. (2013b) *Qualitative inquiry and research design: choosing among five approaches.*(Kindle Location 3218) Kindle Edition, London: Sage Publications. Along with modifications by the author.

After engaging in Action Learning, reflection, and sensemaking, the combined data would generate a report. The cycle would stop and I would create the report. After a time break, I

reengaged the team and enacted the changes and thus beginning the new cycle. This was repeated 3 times and the following sections describe each cycle in detail.

It should be noted here that the process of sensemaking takes many forms and involves a more subjective analysis of the events observed. Kramer (2017) defines sensemaking in its simplest terms as 'when individuals collectively come to an understanding about the meaning of an experience they have had' (p.1). Even so, he goes on to clarify exactly what that may entail and proposes 7 general principles of the art of sensemaking, these include; 1) identity construction, or the remaining aware that observations are also placing the observer in a particular role, 2) all sensemaking is retrospective and a particular interpretation is adopted, 3) the environment is limited to the interactions individuals engage in and the limitations they place on them, 4) sensemaking is a social interaction, 5) sensemaking is ongoing as new experiences are had and even repetitive experiences need reinterpretations, 6) sensemaking is done on a holistic perspective of an event or observation, and 7) sensemaking is built upon likelihoods rather than concrete factual observations (Kramer, 2017:p.2).

Putting these descriptors into context and considering them in an action learning cycle and interpreting them into a more concrete, factual report with actionable planning and results is hardly an exact science. Rather, I would argue it is an art form with more than enough room for individual interpretation. It is here in the action research process where leadership, experience, and intuition all come into play to ensure what is often described as the 'complexity and subtlety of translating ideas into action in a particular work context' or the ultimate task of the doctoral practitioner (UoL, 2017:p.18). It is also important to note that introducing these Action Cycles to my organisation is meant to initiate the beginnings of creating a feedback loop. This particular simplistic style suits this purpose. If this portion of the research were too time consuming or

cumbersome upon the Leaders or participants, the concept would never become the norm for my organisation and the concept of creating a feedback loop would never take shape.

The following subsections breakdown each Action Cycle and provide the rationale, or sensemaking, driving each decision along with a discussion of quantitative data related to production and accuracy resulting with each new technological medium utilised. Table 5.1 below is the first in a series of three Action Cycles (Action Cycle I – Skype) addressing each technology followed by a detailed report. The complete set of quantitative results for each medium can be found in Appendix E - Performance Data within Action Cycles.

Table 5.1 Action Cycle I – Skype

Action Cycle I - Skype	
Steps within the cycle	*Actions taken or observations made*
Engage with real world setting/situation	For Action Cycle 1, I consider my Thesis Action Research Interviews as my initial engagement with the real world setting.
Define the Issue – Initial observations and existing data	Here, the existing data was generated from the initial Thesis Action Research. The issue here is establishing the best communication tools, in concert with best leadership practices, to product the optimum quality and quantity of production.
Planning action/Intervention	Skype would be introduced to the group and used throughout the day, at minimum 3 times, for one week.
Taking Action/Intervening	I still had my original cohort from the initial in-depth interviews. This intervention/Action Cycle lasted for 1 week.
Analysing and reflecting on action Intervention (Kolb's Action Learning)	Concrete experience: Production rates went down, though accuracy as an aggregate went up. Observation and reflection: Though more face time aided in quality, production rates fell below acceptable levels. Forming abstract concepts: Hypothetically, was this form of communication distracting in conveying deep meanings through conversations and hampering in efficiency in terms of time management and convenience? Testing in new situations: Begin Action Cycle II – Email

Action Cycle I – Skype Report

As demonstrated in Appendix E, both quantity decreased as quality of production slightly increased on the aggregate. When asked about the amount of interaction, there seemed to be a consensus that too much time was taken up by connecting to the Skype platform. Not only was the time an issue in terms of slowing production, but the vast majority, 10 of the 13 participants, complained that it took them a while to get their concentration back after the meeting.

A two week break began after the cycle was over. This gave me some time to reflect, collect data, complete dialogues, and let the team reset their usual routines. Though this first face-to-face engagement seemed like a failure at first, I decided this was not a reason to completely abandon the Skype medium. Though I felt that it was a bit cumbersome to enact and it indeed took up precious time, I found it very useful when having to interact on a deeper level than the usual check-ins. Perhaps this could be used as the one-time check-in requirement Leaders perform throughout the shift? For example, if a Reader was not doing well either in pace of production or in quality of production and fell behind, I was able to spend some face time with them and see if everything was ok with them. This is reflected in the literature as mentioned previously, face to face technologies have an advantage in that ability to see communication dynamics such as facial expressions and gestures (Hacker et al, 2019) Often times, it has been my experience when reading for a long period of time in the winter busy season, Readers will experience burn-out. They will want to complete the overtime offered in the high season, but will overschedule to their detriment. It is also the wintertime and since we schedule approximately one month in advance, Readers may become ill and feel they cannot excuse themselves. This is particularly true for the newer, less experienced Readers. The Skype tool helped me as a Leader recognise these issues and thus I will use this tool, though judiciously and far less than the 3 times per day in this Action Cycle in the future.

This type of seemingly contradictory decision to keep a particularly unpopular aspect is reminiscent of Piderit's (2000) notion of thwarting negative attitudes by trial and error. He maintains that all too often when organisations enact change the must resist the perceived resistance to new ideas (Piderit, 2000). In this case, though the group overwhelmingly did not approve of this medium as a major component of our communications, I, as a Leader, felt if it was implemented wisely, it can be a very useful tool for deeper communications when necessary. The final stage of the first loop in Action Cycle I - Skype was complete and after the required two-week time break. Re-engagement with the group commenced as demonstrated in Table 5.2

Table 5.2 Action Cycle II – Emails

Action Cycle II - Email	
Steps within the cycle	*Actions taken or observations made*
Engage with real world setting/situation	For Action Cycle 2, emails were implemented as the main source of communication.
Define the Issue – Initial observations and existing data	Increasing productivity through technology. The issue here is establishing the best communication tools to product the optimum quality and quantity of production. In this cycle, Emails will be used.
Planning action/Intervention	Emails replace all communications, including regular feedback, with the exception of emergencies via telephone.
Taking Action/Intervening	The same cohort was still with me for this week. This intervention/Action Cycle lasted one week.
Analysing and reflecting on action Intervention (Kolb's Action Learning)	Concrete experience: Production rates went up and accuracy rates levelled off to pre-cycle levels on the aggregate. Observation and reflection: Though the group as a whole indicated that they were more productive and their time reading was more efficient, they did not feel as though the emails were necessarily helpful for certain types of communications. Forming abstract concepts: Hypothetically, was this form of communication timely enough to catch scoring trends, 'score creep', or other timely concerns? Testing in new situations: Begin Action Cycle III – Chat

Action Cycle II – Emails Report

Production rates went up and accuracy rates levelled off to pre-cycle levels on the aggregate (See Appendix E). Though the group indicated in our meeting that they were more productive and their time reading was more efficient, the majority (10 of 13) did not feel as though the emails were necessarily helpful for certain types of communications. For example, when in-depth explanations were necessary it was a bit cumbersome to read a lengthy email to elaborate on a fine point. Other times they would experience delays in discussions about certain essays or prompts. Again, this was a drag on their efficiency, but not nearly to the level of the Skype calls a few weeks earlier.

As a Leader, I found that there was a lag in alerting Readers of trends which could potentially be damaging. For example, a phenomenon we occasionally encounter is referred to as 'score creep' where a series of extreme essays of the scale come in and distort the perception of a Reader causing mis-scoring. It is imperative I alert Readers to his trend when it occurs. With the use of emails, however, there could be a serious delay in such timely information and this could cause delays and do-overs.

This finding is not terribly surprising as several companies have begun to shun email usage citing it as a potential source of anxiety, a major cause of inefficiency, and eventual cost of administrative overhead. As previously discussed in Chapter 2- Literature Review Barley, Meyerson, and Grodal (2011) found when emails are overutilised they can become burdensome and add to workloads and some companies have even opted out of using them or at least minimizing their use as much as possible. Again, as a Leader, I do believe emails have their place and I would not eliminate them completely. For example, if the platform malfunctions, this is an excellent way to get a quick message out to the team. The final stage of the second loop in

Action Cycle II was complete and after the required time break. Re-engagement with the group commenced in the final Action Cycle III – Chat as demonstrated in Table 5.3 below.

Table 5.3 Action Cycle III – Chat

Action Cycle III - Chat	
Steps within the cycle	*Actions taken or observations made*
Engage with real world setting/situation	For Action Cycle III – Chat. I implemented our chat function as the final engagement with the real world setting.
Define the Issue – Initial observations and existing data	Increasing productivity through technology. The issue here is establishing the best communication tools to product the optimum quality and quantity of production. In this cycle, Chat will be used.
Planning action/Intervention	Chat would be introduced to the group and used throughout the day, at minimum 3 times for one week.
Taking Action/Intervening	I still had my original cohort from the initial in-depth interview. This intervention/Action Cycle lasted 3 days in the final week prior to COVID lockdowns/shuttering.
Analysing and reflecting on action Intervention (Kolb's Action Learning)	Concrete experience: Production rates and accuracy rates improved. Observation and reflection: Though convenience allowed for immediate communications, a bit of depth seemed missing. Forming abstract concepts: Hypothetically, did convenience or privacy issues hamper in-depth analysis? Testing in new situations: End of first set of Action Cycles. Perhaps begin as a feedback loop for future technologies and check-ins with the virtual teams?

Action Cycle III – Chat Report

For Action Cycle III, I implemented our chat function. This cycle, though it did yield some data, was interrupted by the COVID – 19 lock down. As we were suddenly shuttered, the cycle was incomplete. Nevertheless, I collected the data I could get, in this case a partial week and drew conclusions accordingly.

Though we could not complete the week due to the pandemic and drop in workload, we managed to complete 3 full shifts with chat as the main medium of communication. The results in terms of quality and quantity of production remained level in both production and accuracy with a slight, though negligible increase in production (See Appendix E). Again, overwhelmingly chat was favoured by the majority of Readers (11 of 13) as it was quick, provided for very little down time during discussions, and was easily accessed as out chat feature is built directly into our platform (unlike the more arduous methods such as email and Skype where leaving the platform is required).

When asked about ease of use, the majority of the group (10 of 13) felt that chat was the least intrusive communication method as it was quick, on the platform, and was not as distracting as the other two tools. Nevertheless, I still felt that while utilising the chat feature, the members were much more distant and not as interactive or open as they were in the other communication mediums. I could not help but think if this was perhaps a privacy issue? The question was raised when we were introduced to the new platform a few years ago. Could the Test and Development personnel at HQ read our comments since it was the company's chat feature? Having worked at the company for many years, I was acutely aware of this concern when it was raised and I imagine it would also occur to newer, more technologically savvy employees. The concern here is not our behaviour or netiquette or appropriate language, but rather the notion that we might be judged for having questions about our work. Huppke (2015) points out several reasons employees will be hesitant to admit they do not know something pertinent to their work. For example, when one is labelled as a professional or expert in their field, particularly in academia, they might feel hesitant to raise a question out of fear they will be judged for not already knowing the answer. Some employees have even been known to suffer from what is coined

‘imposter syndrome’ where they imagine they will be exposed for not knowing as much as they should (Huppke, 2015).

As a Leader understanding both sides of this issue, though I do find chat very useful and convenient, unless it is a very quick response, I feel I should resist temptation of overuse this medium as it could cause some discomfort and force employees to resist speaking out or raising concerns when necessary. Here, for this tool, I would also reserve using it more for seasoned Readers who have proven themselves experienced and anything but shy in an academic atmosphere. As of the date of this thesis we have not returned to full operations due to the COVID-19 pandemic but I fully anticipate revisiting these cycles once the opportunity arises.

5.2 Conclusion

According to the University of Liverpool (2017) ‘Actionable knowledge comes from research that connects practice and theory, knowledge, and action. It is concerned with what action makes sense or is prompted by the insights, information and awareness created through inquiry’ (p.17). This chapter accomplished just that as the main goal per action cycle performed was to both evaluate and improve my practice and the results of my teams as well as provide some insight into this process so that the body of knowledge throughout the community of practice (through recommendations gleaned) is expanded. The initial interviews and literature review along with my applied rationale and judgement informed the Action Cycles performed in this chapter. It is clear that technology influences productivity, particularly in the case of my organisation. But after examining the results, it remains clear that technology is only as good as its users. And, in this case, the users will only be good if they are given the proper tool for the task at hand and are lead in the right direction. Providing them only with technologies, even state of the art facilities, if no one is there to guide them and make sure their concerns are heard, (as

discovered in the initial in-depth interviews) then the best of technology becomes moot. The next and final chapter wraps-up this project with reflections, recommendations gleaned from the research for a wider audience, implications and actions taken as a result of this research for my organisation, and my own personal journey and finally major takeaways from the project and beyond.

Chapter 6 Reflections, Recommendations, Implications, and Conclusion

This chapter includes reflections on relevant points made throughout this body of work, recommendations that may be useful to implement within my organisation and beyond, the implications of this work in terms of the actions I have taken and will take as a result of the action cycles performed, observations I have made, and concluding remarks. A section making note of my personal journey can be found in Appendix F – Personal Journey.

6.1 Reflections

As I have mentioned previously, as far as my colleagues were concerned, research projects in our workplace were nothing new. Many of us took school to work and asked humbly for our colleagues to become the proverbial guinea pigs. Though they were happy to participate in the study and certainly were positive in terms of being asked for their input, as Marquardt (2005) argues, this would be the case.

First and foremost, the overarching theme discovered here is that leadership overwhelmingly is the driving force for positive outcomes in communications and for both production and accuracy rates. As indicated throughout the literature review, several arguments were made across disciplines as to what ultimately makes virtual communications successful in the virtual workplace. Some scholars argues it was the usage of proper technology while others argued it was the social milieu. The findings here, both throughout the initial in-depth interview and the Action Cycles and mini-dialogues, strongly indicate regardless of which of these elements you choose, leadership is the ultimate determining factor. I would go so far as to argue that the social atmosphere and the technology are sub-categories of the quality and appropriateness of the leadership implemented.

That being said, several specific conclusions can be gleaned from this study. Frequency and quality of communications and their success are determined by leadership. In retrospect, perhaps I was a bit too ambitions in my quest to find a more substantive answer to the question of finding the right balance of time and communications. Naturally, as incidences arise and each occurrence has its own idiosyncrasy, the idea of time playing such a strong influence in efficiency we see this question being posed over and over across many fields. Emergency responders have a set goal to reach in response times. Even physicians have a theoretical set time to see patients. Even so, is frequency of communication the best question to be asking? Should we be asking it expecting a solid number (or at least a range) for optimal performance? Is this my proclivity toward the quantitative that drove me to pursue this question?

Creswell (2013b) sums this concern up well when he poses the question of whether it is even possible to know or obtain a 'right' answer (Kindle Location 4529). Indeed, is it possible to know or obtain a 'right' answer for some questions? In this case, the concrete answer for technological usage in terms of time is somewhat elusive. When we encounter research questions like this, does it mean we should stop and give up? Do these questions have value? I would argue they do as any enquiry can yield unexpected results. Research is not a linear journey in and of itself. The process is fluid and is a learning experience as it should be. Additionally, in references to my practice, these uncertain findings stand as an argument against establishing communications for the sake of doing so without proper justification. The practice of contacting members without need, as a result of these findings, is questionable at best as it has no real added value and distracts workers from their tasks. Again, the notion of quality of leadership superseding the frequency of contact (and thus negating the notion that frequency equates to quality leadership) is a very significant finding for my organisation. Frequency of communication has been substituted and mistaken for quality leadership as a matter of policy and

these findings strongly challenge that notion. If anything, they argue against this as distraction was perceived rather than helpful and knowledgeable leadership interaction.

Again, since I believe no sincere and rigorous quest for knowledge is wasteful, regardless of how small it is in scale, I am pleased to report that indeed the group members in my team, once they were engaged, did revive their ownership in their work. I would argue that yes, once they felt they were listening to and had a voice that they began to feel more like stakeholders rather than just employees. They had obtained somewhat of a voice and were enthusiastic to use it. As a matter of fact, it was this notion that lead to engaging workers becoming a recommendation and was evidenced by their enquiries as to continue our Action Cycles as feedback loops in the future. The benefits were obvious.

6.2 Recommendations

According to Monash University (2020), recommendations can be written within or separate from a conclusion and should reflect the aims or objectives of the study (Monash, 2020). The University of Liverpool DBA programme, 'Writing recommendations based on the initial inquiry will not be adequate… a doctoral practitioner must show themselves in practice handling the complexity and subtlety of translating ideas into action in a particular work context (UoL, 2017:p.18). Furthermore, Holwell (2004) argues that in order to maintain validity, action research must demonstrate recoverability or maintaining a "consistent criteria for judging the truth-value of the claims" being made (p. 355). Likewise, iteration should be held at a constant as to be traceable if not repeatable as is often difficult to achieve in action research where often times research is performed in a microcosm (Holwell, 2004). In order to maintain this consistency, the following recommendations are based upon the combination of the initial interview enquiry findings in reference to frequency and quality of communications and Action

Cycles results performed in reference to technological tools and their efficacy. In addition to these findings and results, these recommendations are supported throughout the literature. The iterative process was heavily employed here to produce the accumulated knowledge gleaned from the study as organised into the recommendations below. These recommendations include suggestions for application in a working context and reflect my own leadership instincts and what I consider to be necessary managerial steps to ultimately accomplish the purpose and goals of this research, namely, to improve accuracy and production and communications in the virtual workplace. The ten recommendations below are the result of this inquiry and are deliverables from the project:

Recommendation #1 Integrate a Media Rich Platform for Virtual Teams

Technological preferences stem from both personal inclinations and the nature of the activity the user wishes to present. Team members can be very similar in their backgrounds, experience, and knowledge base, but have very divergent opinions about what works for them the best in the way of communications. This finding was not only the most prevalent in my group, but was also strongly supported in the literature (Malhotra, Majchrzak, & Rosen, 2007). It was also found that males had a greater interest in the overarching view of applied technologies opposed to females who valued the more immediate and portioned benefits of said applied technology (Nagahi, Hossain, & Jaradat, 2019). Additionally, it is increasingly being found throughout the literature that media richness is accredited to increasing levels of authenticity of participants (Brodsky, 2020). These findings were in line with the findings of this study as utilisation of technology was largely of personal preference and no one technology was overwhelmingly unanimous in its application (though there were tendencies and indicators of higher efficiency). As discussed in Section 4.3 Findings of In-Depth Interviews, this was evidenced by preference among male and female participants where the vast majority of males

attributed technology directly impacted their performance while female responses were mixed. This concurs with Gheni's et al (2016) findings of gender perceptions. Nevertheless, for a work environment like mine where team members are frequently interchangeable, it is imperative that individuals be given the freedom to choose their preferred technology, when applicable (of course this excludes purposeful and task specific technologies as discussed in Recommendation 4 below). This is surely an element necessary for successful interaction of leadership in virtual communities.

Recommendation #2 Know Your Team Members

Continuing from the first recommendation, it is not only important that you provide your team members with appropriate technological tools, but as leadership, it is important to understand what works best for them. This can only be achieved by being proactive in your role as a Leader and performing such tasks as; noting references to accomplishments, competencies, and prior experiences, keeping track of progress, and valuing and mentoring your team when necessary (Pullan, 2016; DeRosa, 2009). As noted in the initial interview and action cycles of this research, preference in technologies was across the board. Likewise, some members of the team preferred to work independently while others craved more interaction and feedback. This was reflected in Frequency where it became clear that experienced team members preferred less frequent, brief, but substantive interaction. Getting to know their preferences, even if it is to confirm their experience level at the start of the shift as years of experience might also determine interest in frequent interaction, will certainly improve performance. Though we have experience as an indicator presented to us as Leaders at the beginning of our shifts, I would like to see more information that could help us get to know our colleagues better. Perhaps even ensuring we rotate enough in our shifts that we get to know all of the Readers equally. As of now, the scheduler is so random, it does not allow for familiarity to take place and this could hamper

Leaders' abilities to serve their Readers well. All of these are vital activities to ensure communications are effective and all play a role in the efficacy of these tools. Again, these findings strongly support the role leadership skills play in the success of virtual teams.

Recommendation #3 Competent Support Centre

Though this was not part of the initial interview guide, the issue of technical support came up repeatedly in the open question at the end of the interviews. This was almost a unanimous result throughout the interview process. My team members all felt that support was lacking and though they would like to see more technology introduced and upgraded, they also felt burdened by the lack of proper support. This is reflected in the literature as Gheni et al (2016) note that even in the highest levels of technically advanced teams (such as software developers) the training and development via competent and attentive support provided to team members leads to higher performance among virtual work groups. They have found this factor outweighs even some other crucial factors such as authenticity or other social factors commonly thought of as significant indicators for increase productivity (Gheni et al, 2016). Now more than ever companies should be sure to have adequate funding and support staff ready to assist virtual workers. In practice, I would like to see our technical support teams be held more accountable. When team members drop in production numbers due to technical issues, they begin to feel anxiety which can result in negative consequences, such as poor performance in accuracy levels or even an increase in turnover rates. As it stands, when something goes wrong technically the technicians are not allowed to consult the Readers about their own personal computers and are simply required to describe what the system requires of them and at the end of the conversation, the Reader is handed a "tech ticket" which is just a reference number that the Reader was in fact in touch with the technical assistance team. This is simply inadequate service and I feel for such

a large corporation with the resources we have available, we can do better. In short, a revamping of our technical support team and their role is in order.

Recommendation # 4 Use Technology Wisely and Purposefully

After the initial agreement of preferences in technology and timing, as I had learned throughout the action cycles, the novelty of a strict adherence to a particular communication routine soon wore off. What was initially looked upon as be organised, interesting, and attentive quickly became viewed as encumbering and interfering with the natural flow of work when the technology was imposed upon the team members rather than a natural instinct or chosen preference. From a managerial and leadership perspective, this is well in line with the literature as Alvesson and Sveningsson's (2003) caution that too much interaction can lead to micromanagement. From the technological point of view, the purposeful implementation of technology is equally important. Lehman and DuFrene (2016) emphasise this notion when they break down applying specific technologies and assigning them specific purposes. For example, they argue certain technologies should be reserved for specific uses, such as formal and informal communications (Lehman & DuFrene, 2016). Much like how many online courses have built-in virtual spaces for student to student discussion while maintaining separate spaces for instructor-student communications (Lehman & DuFrene, 2016). This coincided with my findings as purposeful usage was expressed by my virtual team, but increased productivity both in quality and quantity. Can a perfect formula of interaction combined with technology ever be established? My participants were clear about not wishing to be disturbed in the middle of their reading and often expressed frustration when a Leader would call because they were compelled to do so even though there was nothing at hand to discuss. Relevance and redundancy were of concern here across the board. It is entirely possible that this is not a feasible goal to be expressed in certain terms, such as 3 times a day for X technological piece. However, if a Leader

is mindful of how the impacts of frequency of technology and how that technology can and should be used in particular situations, the efficacy of such usage can be beneficial for both the virtual team as well as the organisation as a whole. I am going to suggest this practice of HQ encouraging Leaders to call for the sake of making contact for a certain amount of times per shift cease. Rather, I would like to see the proper technology utilized; if contact has to be made, then make it so that it is silent or less intrusive, such as a check in email, allowing the Reader to respond at their leisure.

Recommendation #5 Provide Adequate Training to Ensure Equity

Implementing of this particular recommendation in a practical sense could be done in-house, through internal tech teams via face-to-face interactive platforms, such as Zoom or in a more cost-saving measure, they can be in a series of online interactive modules. The onboarding process could also stand as a great way to connect with employees, particularly those who will remain virtual. Again, this is supported in the literature as Germain and McGuire (2014) as they argue the importance of maintaining equity in technical skills where interaction demands team members maintain adequate skill sets.

This was another clear point that was expressed across the demographics of my team. Not only was this a common response, it garnered an unexpected added layer to the Functionality category and was overwhelmingly referenced throughout the interviews. Specific to my organisation, our technical support team is not charged with aiding our Readers with specific advice when things go wrong. They are only responsible for what the system and our company servers are doing. We as Leaders and Readers are forced to share with each other tips on how to get our computers running optimally. We are not computer experts and those that we rely upon are but cannot or will not assist us with our personal equipment. This outsourced technical response is quite frankly inadequate and their duties should reflect the needs of the virtual team

members not just the basic provisions they purport to provide. I am certain this element in working with virtual teams is key to improving performance.

Recommendation #6 Respond to Enquiries Promptly

As with many organisations, virtual teams may already be fully in operation or will be moving to a permanent virtual setting. In this case, it is possible that employees will never meet anyone they work with face-to-face. In order to gain trust, it is imperative to not only communicate with them, but to do so in a timely manner. This was expressed both in the initial interview as well as the action cycles of this project, as leadership played a major role in the success or failure of establishing solid communications and in turn providing for positive production results. Again, Lehman and DuFrene (2016) identify trustworthiness as a key factor in successful virtual teams, they indicate that not only in establishing appropriate venues for communication, but also in regularly using those venues when appropriate can only contribute to increased productivity. This not only takes care of individual problems promptly, but can also serve as a way to establish a rapport and avert accumulated undesirable consequences due to not addressing issues in a timely manner.

The notions of mentoring and feedback resonate here in terms of leadership. Overwhelmingly, this was expressed throughout my team, but particularly had meaning for the Readers of the group as this was an important part of quality of communication and their sense of community in the team. This is particularly important in a virtual community – this allowed them to grow as well as feel they have a sense of input and that leadership is taking interest. Here, I think Leaders in our groups could be given some guidance in terms of just how important this aspect of virtual communication can be, not only in terms of keeping production high, but also in maintaining a good rapport with Readers in the virtual workplace. Better and more

frequent training, potentially in the form of leadership seminars, would be a great way to address this and any other issues that come up between Leaders and Readers in the course of a shift.

Recommendation #7 Establish a Consistent Schedule

Having a map of your workday is often helpful for not only being efficient and setting milestones, but also for letting your team know what to expect and what you expect of them (Gold, 2020). Likewise, having your weekly or monthly schedule available also allows for lower anxiety rates among employees (Golden, 2015). This is not to say that there will be no unexpected occurrences or that schedules are unchangeable or rigid. An organisation like mine is dependent upon ever-changing volumes of work and these shift throughout the year seasonally as well as day to day so it is unrealistic to expect a strict consistency and adherence to scheduling. Rather, scheduling in this sense is to make your expectations clear for the virtual team members and falls in line with both the atmosphere and familiarity aspects of this research. Participants expressed their desire to have clearer expectations expressed and that included timing as mentioned earlier, schedules are announced a month in advance, but can be erratic as they are often altered. This disconnection to the atmosphere can be remedied long term as announced tasks and shifts or as daily reminders for the day. A simple announcement of the volumes we have in the queue to complete, the topics we might be reading about, or if we may have to switch essay types in the middle of the shift all helps the Readers prepare for the day.

Again, the idea of shared leadership brings with it special considerations. As my participants expressed some anxiety in never knowing what to expect until they login the system in terms of who they are working with for the day, they can experience a certain amount of anxiety. This was particularly expressed in the discussion of frequency of communication. This is a common theme in practitioner literature as Golden (2015) argues that without consistence, both throughout a shift and in creating the shifts themselves can lead to worker dissatisfaction

and thus lower productivity. As it stands in my department now, the only way members will know what to expect is if they have already worked often with their Leader. This, coupled with the erratic scheduling of 24 hour notice of additions or cancelations of shifts causes even more instability among our workforce. This is something necessary for me to address with HQ in the future (as it is not possible now due to the pandemic). Again, introducing familiarity by allowing more communication and more virtual social interaction, whether that be through regularly scheduled meetings or engaging in a variety of available technologies, such as video platforms would greatly improve the issue of unfamiliarity.

Recommendation #8 Take Advantage of the Technologies You Do Have

Too many organisations do not fully engage in their available technologies. For instance, our online scheduler still does not generate automatic emails to alert employees that are on the schedule to work the next day. Something as simple as this could save time, money, and a great deal of frustration throughout the workforce. This same sentiment can be applied to our current technology in relation to performance as well as communication. For example, Leaders still have to create messages to alert Readers when they are taking their breaks. Our platform could incorporate a simple toggle switch that would save time in compiling these necessary, but repetitive tasks. Login issues, change up of the interface, and a whole host of challenges that come up in terms of the integration of technology in the workplace proved to be a source of contention. Using technology that is familiar and clearly works was the preference for the team. This was clearly expressed as an issue of ease of use or Familiarity. As Thomas and Bostrom (2010) argue, revisiting available technologies and their effectiveness is a must and my organisation fails to recognise this simple task as necessary. In the 15 years I have been employed here the platform interface was updated a mere three times. Very few changes were

made from the last upgrade as much of the improvements had to do with internal security concerns.

Recommendation #9 Reach Out to Your Teams

Continuing on from the recommendation above, reaching out to your teams can be a great way to ensure you are taking advantage of all of the technologies available and those that may exist that we are not taking advantage of. For instance, several participants expressed interest in using other technologies they found familiar or convenient, such as mobile texting. They point out that other institutions they work with offer these options but we, as a large well-endowed corporation, have yet to add something as simple as texting to our repertoire. Cordery et al (2009) astutely make this point and caution that indeed the users of inappropriate technology can in fact become victims of its misuse and thus negatively impacting workplace efficacy. As noted previously, being aware of your team members and their preferences is a given, but being proactive in engaging them is also important. Again, in the 15 years I have worked in my organisation, this is the first time Readers were engaged in offering their opinions on technology and its use. This is simply unacceptable as the teams are now strictly virtual, with no face-to-face interaction for over 10 years. As Hirsch (2019) points out, physical distance might play a role in breeding unfamiliarity, but it is also important to close that gap through communications in the virtual workplace. As discussed many times throughout this thesis, leadership and its role cannot be emphasised enough as expressed time and again throughout the interview process. As Leaders, it is our responsibility to take the initiative and delve more into what our Readers want and how to deliver it to them.

Recommendation #10 Don't Just Talk…Listen

So many of the complaints uncovered in these interviews originated from the issue of leadership not listening and allowing for input. In the name of efficiency, it has been reported

that feedback, especially if negative, was given in haste and no opportunity for discussion was provided. This is not only inefficient in terms of wasting a teaching moment but also in terms of leadership gathering information that could benefit their own practice as well as the organisation as a whole. I am not surprised the many points raised by Marquardt's (2005) approach to leading with questions are so applicable here. I am also not surprised that Leadership takes centre stage and remains at the forefront of participants' concerns. Repeated desire for there to be strong and present leadership is reiterated time and time again across responses. Again, Lehman and DuFrene (2016) reiterate this point when they emphasize the importance of communications in the virtual workplace to not only trickle down but to have a way where all employees can be heard. This is an issue in my department I particularly intend to raise to the forefront. Prior to going strictly online, we had face-to-face meetings where those of us on the periphery in the virtual workplace had a regular opportunity to interact with HQ. Today, we do not and I would suggest we establish regular interaction to prevent potential issues from arising such as high turnover or frustration with the status quo in terms of input or lack thereof from the virtual teams. This is an issue that goes beyond the confines of our virtual teams and reaches HQ and senior leadership. Here, it is important to harken back to McKelvey's (2006) cautionary warning concerning those within organisations who will obstruct the flow of information and thus hamper improvements for the sake of their own exclusivity and benefit. I recommend that senior HQ executives also join the dialogue to avoid this potential obstruction.

6.3 Implications

The above recommendations hold the potential for leaders in the broader business world as they could result in several positive outcomes that could lead to revolutionising the way similar organisations to my own function on several fronts. I concur with Koshy, Koshy, and

Waterman (2011) when they astutely point out that 'In action research findings will emerge as action develops, but these are not conclusive or absolute' (p. 3). This seems to be the case here as the implications of this research provide a map or direction my organisation should strive to follow rather than a means to a concrete end and final destination. Indeed, there is more work to be done.

In retrospect, I chose to examine the problem of communications from a technological aspect. Indeed, according to Laundry (1994) the atmosphere was ripe for the question as all milestones pointed to a legitimate research question in the problematising process discussed in the Methodology chapter of this thesis. Nevertheless, one would be lacking in their conclusion to believe this is the only matter of concern at hand. The fact that this was the first outreach performed geared toward the utmost periphery of the organisation reveals volumes. Why hasn't HQ reached out formally prior to this? Is this an organisational flaw? A managerial shortcoming? Certainly, questions addressing communications in the realm of technological use is appropriate but it is not the all-encompassing solution nor is it the sole problem in my organisation. Obviously other pressing problems exist, but tackling this one, which was well within my purview, was a good start at uncovering other lingering problems throughout my workplace originating from HQ and beyond. The fact that a question was raised and action was taken after 15 years of establishing the department is a promising beginning and a potential for continued and improved positive leadership throughout the organisation. This organisational shift of engaging employees and the fact that a dialogue was opened coupled with opening a pathway to measure and monitor the efficacy of communications with the virtual teams was the ultimate "actionable" purpose of performing the Action Research. This was indeed accomplished.

Moving from the examination of the problem at hand to the actual practice of communication technologies, one can clearly make the prima facie observation that our

technology is not prime or state-of-the-art by any means. Being limited to 3 somewhat antiquated modes of communication, namely Skype, chat, and emails, it is easy to argue that the communication issues fall squarely within the technological capabilities afforded to our virtual teams. As I have discovered after this series of interviews leadership and solid interaction remained paramount in the minds of the participants of this study. Nevertheless, there were times where the type of technology came to the forefront of the discussion. It was mentioned several times that team members expressed their desire to utilize more modern and up-to-date technologies, such as mobile phones and tablets, both of which are not allowed or compatible with our system. Most of us in the virtual groups have other employment throughout academia. At times, this exposes us to some of the more modern technologies we find fast, efficient and much more convenient, such as texting. Yet, these are barred from our usage in this particular function. When this is mentioned, the idea, without any further elaboration is quashed. Moving forward, I would encourage our security and tech teams to look into this as an entire new generation of Readers will be joining our ranks and I believe, though I am not an expert in the field that these security issues can and should be addressed.

As far as our departmental structure is concerned, the earlier discussed "wagon wheel" (The Delphi Group, 2021) structure holds several implications in and of itself worthy of consideration. For instance, we are not only separated by time in asynchronous teams, but we are indeed separated by space and time. Granted, this anonymity in our non collocated team structure is a necessity for the integrity of proper scoring (that no collaboration take place among Readers and that each score be freely given without outside influence). Nevertheless, I cannot help but reflect on the harm of no collaboration, lack of discussion, or even the slightest bit of support amongst colleagues that can result with this type of isolation. This particular set up in the virtual workplace may have its purpose in keeping scoring integrity but it lacks in the passing of tacit

knowledge that other corporate structures offer. Though reviving the in-person meetings we had years ago would no longer be an option, I would like to suggest that we introduce a video conference for peers. Even if this venue is an informal one, it would open up the possibility for learning, growth, and mentorship that otherwise is currently not possible.

These aspects which have been uncovered throughout this research project all pose excellent future considerations, enquiries to prompt other departments (such as our tech teams) to investigate what they can do to improve the situation from a technological standpoint, and also can all inspire future research projects with both potential theoretical as well as practical implications for anyone engaging in virtual workplaces. The next section delves into what I have done as a matter of practice as a result of these findings.

6.3.1 Applied Actionable Knowledge

As a direct result of this study, the several immediate actions were taken to improve production in my department. These actions are specific to the findings from the initial interview, the results from the Action Cycles, and my own personal observations and judgements as a Leader based off of this study as they only apply to my organisation. First, three separate technological changes were suggested and/or implemented. A retooling of the chat feature to be less intrusive when notifying the user that a message awaits rather than a full pop-up which can serve to distract the user. A toggle switch was added to the performance indicator so that it could be hidden allowing the user to check performance at their leisure or when requested and thus reducing user anxiety if performance temporarily dips below suggested norms. And finally, I have sent in a request to look into implementing newer technologies such as mobile text and tablet integration to make work more convenient for our Leaders and Readers.

Since the impact of leadership was the greatest most influential and often referenced theme impacting our quality and quantity of production, I requested a change to our Leader meetings. We as Leaders should be provided more guidance in technological leadership. Holding virtual leadership workshops and being provided the latest literature on how online leadership is conducted should be included in our regular meetings so that we can better serve our Readers in our virtual groups. This would not only improve communications, but also provide some levelling of skills across leadership so that we are more uniform in our abilities.

In addition to these leadership steps outlined above, I also requested two administrative changes. First, I put in a request for senior HQ executives to regularly schedule virtual meetings with Readers to provide a venue for two-way communication as well as inclusion into the decision-making process for all virtual workers. Second, I ordered a re-examination of the role of our Support Centre. Though I do not have direct authority to change their role and interaction with our virtual groups, I can request an enquiry into their efficacy. If they are only there to provide up proof we had an issue by providing a "tech ticket" and not there to be sensitive to the needs of our employees in areas of real concern, then perhaps their role or even contracts should be reconsidered.

And finally, I feel this is just the beginning when it comes to tapping into our talent throughout our virtual teams. I would like to see these regular enquiries to continue throughout the year on a periodic basis. Furthermore, I would like to see a feedback loop put in place where our employees will have a regular venue to contribute their insights and a mechanism for our executives to tap into those ideas easily and move into action to improve our environment and production all around. The design of the Action Cycles used in this study were intentionally created with ease of use in mind. They are a quick and easy method to periodically reach out to the virtual work groups to gain very valuable input moving forward. Of course, at the moment

we are still experiencing low volumes and are working with essential personnel only due to the pandemic. Nevertheless, I would like to see these opportunities for outreach and collaboration for improvement available soon after we return to full production.

6.4 Conclusion

In retrospect, several things could have been done differently. In terms of my acting as a scholar-practitioner, of course, this is something outside of my purview, but I would have liked to have performed this type of research while in a role that could exert more authority. For instance, I think it would have made a difference if I were able to implement or change policy, such as placing checks on our technical support centre or be able to allocate funds for better training in terms of user-end technologies for our teams.

Also, due to the limitations of the manner in which our teams are formed, I was limited as a participant observer to a small group of participants. Likewise, I would have preferred to have a compiled a purposeful sample of interviewees so that I may make better comparisons, and as Creswell (2013b) argues, examine the outliers to gain a broader perspective across the spectrum of ideas in the group. And, in terms of my research, if I were to repeat the process of such an in-depth style interview, I would try to remain more uniform in my approach. Though the open and more natural dialogic style was more natural, particularly for those participants that I was familiar with and had known for years, and most likely did tend to work in getting them to talk more about their experiences, I think the risk of tainting data is too great and the clean-up that goes along with correcting those transcripts is not worth the effort.

I would have also liked to have been more of an objective observer for this particular research rather than a participant observer. Perhaps because I was charged with working while

simultaneously experimenting with the technology I was not as fully engaged both as an employee and as a researcher. Of course, this is not particularly one hundred percent avoidable if one is engaged in action research of their own organisation. Scholars have even argued that this might make the fine line and distinction between action research and what could be considered inside consulting (McKay & Marshall, 2002).

I would have added another set of interviews to enhance the depth of understanding of why my organisation made the decisions it made in terms of going solely online or why it chose the technologies it did or why do we have the corporate structure we have in place (why rotated leadership, why separate Readers from HQ – doesn't this cause them to remain on the periphery of the organisation?) Of course this thought had occurred to me, but due to my time constraint and the limiting nature of the pandemic, I would not have had the opportunity to pursue such a line of questioning. Even so, this does leave the door open to future studies.

After taking action in the above manners, I had also found, through reflection some of the following issues that I felt were overall surprising to say the least. First, an enquiry was made in an area of my organisation that no one had done before. I would argue this was badly needed not only to gain knowledge but for the morale of our groups. Perhaps the most revealing part of this project was not in its conclusions and recommendations for external use, but rather an exposure of some rather troubling structural and cultural issues throughout our department and the organisation as a whole. For instance, why have these questions of how our own virtual teams could become more efficient and improve performance never been posed to the virtual team members prior to this investigation? Why would an organisation as large, well-funded, and supposedly academically advanced and technologically savvy as mine never once pose these simple questions to its employees?

Though I am inclined to believe this is an internal managerial issue that deserves more attention and further research McKay, Marshall, and de Salas (2006) make an outstanding point concerning where action research is involved. They point out that one must be aware of the multiple perspectives that emerge as to what the problem is and hence how it is viewed and the value of the solutions gleaned (McKay, Marshall, and de Salas, 2006). For instance, they point out that a CEO can view our problem as cultural, a CFO could see it was more of a funding allocation issue, and I as a participant observer, could view our communications issue as more of an issue of practice and lack of training and thus the solutions we seek and the conclusions we come to can and would differ greatly in nature. Though this remains outside the formal scope of this study, after observing the at times apathy and lack of confidence in support our team members expressed, I feel this is a major flaw in our corporate structure and the lack of engagement with our own employees' needs to be addressed. Perhaps a major implication here will be that employees will become inspired and feel more emboldened to enact change and those in executive positions will become more inclined to reach out.

Second, a project was initiated that not only laid the foundation for future enquiries, but also stands at the forefront of a new era in virtual work in the post COVID-19 world. The project stands as evidence that no project is too small if it adds to the body of knowledge as one never knows what innovation or necessity is waiting around the corner. In this case, just the fact that a simple question was raised has opened the door for further enquiry and that it is now a necessity for our organisation to thrive in the changing virtual workplace landscape. Additionally, though it is of a more personal nature, undertaking a project of any size or scope in one's organisation can be advantageous not only in terms of gaining personal knowledge as I have done in terms of my own insight into my leadership approach, but also in the way that by showing the initiative

one can grow or find new opportunities with the organisation. This alone made the effort worth it.

This enquiry can spark interest in other forms of online collaboration and thus cause further inspiration to occur whereas prior to this project, there were none. These may not be massive changes, but step by step they can lead to greater changes over time and foster an organisational culture of inclusion (as this lack thereof was a concern of mine from the beginning and served as the initial inspiration for this project in the first place for new employees evidenced by a lack of enquiry in the first place).

I appreciate the question of considering whether the information extrapolated from this study can be used by other organisations and transferred by education. As a labour economist with a specialisation in professional development, I think keeping this possibility in mind is a very worthy consideration when performing future research. This is especially an excellent idea where action research is considered. As I have compiled a list of recommendations supported by the literature and gleaned from data collected in the study, I would argue that those recommendations could contribute to other organisations through education. As a matter of fact, in the post COVID-19 era, I would say that this is very relevant and timely as much of the world is moving toward virtual platforms.

Additionally, I harken back to Swisher's (2012) conceptualisation of a good contribution to the body of knowledge referenced in the introduction of this thesis. I would argue this thesis has successfully met the criteria of a good contribution to the body of knowledge. Swisher's (2012) first key component; adding to a topic where not enough research has previously taken place meets the criteria. Indeed there is much being produced on the topic of virtual work now that we are in the post COVID-19 era, but the type of organisation, one which engages in rotated leadership, is still in its infancy and I think this will be an emerging format as more and more

people obtain higher education, more will be able to share responsibilities and work together rather than for each other. So this is also a unique factor. Secondly, providing solid evidence to validate the claims of the new research comes in the form of rigorous examination of the qualitative data extrapolated from the interviews. Again, this has never been done in my organisation; to explore the topic of communications in the virtual workplace or with such a unique group of participants.

And thirdly, contributing good theoretical development that is applicable and relevant to the question and topic at hand goes along the lines of adding to Hyrkkänen, Nenonen, and Axtell's (2016) theoretical framework built upon Lewin's apothegm that behaviour is a function of the person and their environment, or B = f(P, E) combined with Diller, Shedroff, and Rhea's (2005) good fit for virtual workplaces criteria. As we have seen here, the data indicated that in fact males believed the capabilities of the technology tended to improve their performance whereas females were less likely to follow this course of thought. Likewise, older participants preferred telephonic communication opposed to textual and visual means of communicating. This supports Lewin's person/environment theory. In terms of Diller, Shedroff, and Rhea's (2005), I added the element of Leadership to the framework which allows these very significant themes to be explored with a new element to consider not originally integrated into their original categories. Clearly, as I had made the point earlier in the findings of this thesis, Leadership perhaps played a major role in both how technology was used and how communications flowed directly impacting production quality and quantity. I feel this is also a significant contribution to their proposed Experience Categories (Diller, Shedroff, and Rhea, 2005).

I am certain, however, that my practice as a Leader and my approach to my teams, my colleagues, and my clients, and my students has shifted greatly. As I had mentioned earlier, I would have liked to complete at least 3 Action Cycles which would have the potential to initiate

the establishment of a feedback loop. I consider the initial interview here as more of a pilot study as it has technology and communications in reference to production had never been formally raised before in my organisation. It is my hope that a feedback loop is established and we begin to empower the voices of those who bear the burden of the virtual work, yet have no say in its execution.

There are several aspects of this project and the accompanying research that I have learned a great deal from engaging in. At the beginning of this paper, I had mentioned that I am generally a post positivist with a functionalist view. I was always lead to believe that this was the most rigorous and scientific way to proceed with research. After delving into the process of qualitative research, I have found that to no longer be true. Though I still have strong roots in my field and vision, I have to confess that although action research comes in many forms, the Thesis Action Research/Core Action Research design certainly can be as rigorous as any other approach if not more so. As a researcher specializing in this type of structure allowed me to maintain a balance of rigor and relevance. The only major downside to this approach is that it can be costly and lengthy depending upon the scope and context of the topic. After all, this design has two studies contained within it by default along with two basically separate questions to answer and inform each other. That is a very complex, but very rewarding research avenue to take if one is fortunate enough to be afforded the opportunity.

I have also discovered it is worth it to take the initiative. So many arguments throughout the project pointed to this idea that in practice this is necessary not only for the organisation, but also for my own personal growth. For instance, even though my company is a multinational, multi-billion dollar organisation that is practically its own monopolistic industry known for educational technology in the sector, they had yet to enquire of their own employees and build from that information. If for nothing else, they should have done it to improve their own

standing. I am aware that they research these communication techniques and even provide services to the public, but they never once engaged their own employees. This is a striking reality and one has to wonder why this is the case. Is there that much distance between executives and the employees in the field? Is it out of sight out of mind corporate mentality that is causing this rift? Perhaps now, this will be eye-opening and change will occur. Nevertheless, it starts with an enquiry and a person willing to do it.

As of yet, no major upper-level executive actions have occurred (such as changes in funding our support centre). As I have mentioned previously, the timing of this project just barely allowed me to finish the collection of the data before everything shut down. Though I cannot speak on executive action of others, I can say that my practice and perspective as a leader have changed drastically. I no longer take for granted that action must be a one-directional path in business. I will end this journey with a take on the first lesson in the first module I attended here at University of Liverpool so many years ago…Just as Mumford (1996) famously brought to light the notion of self-awareness in the short but powerful phrase I am the problem and the problem is me, after taking this journey, and learning how to be a better practitioner, I found this can be reworded and redirected to also take the strong position of I am the solution and the solution is me.

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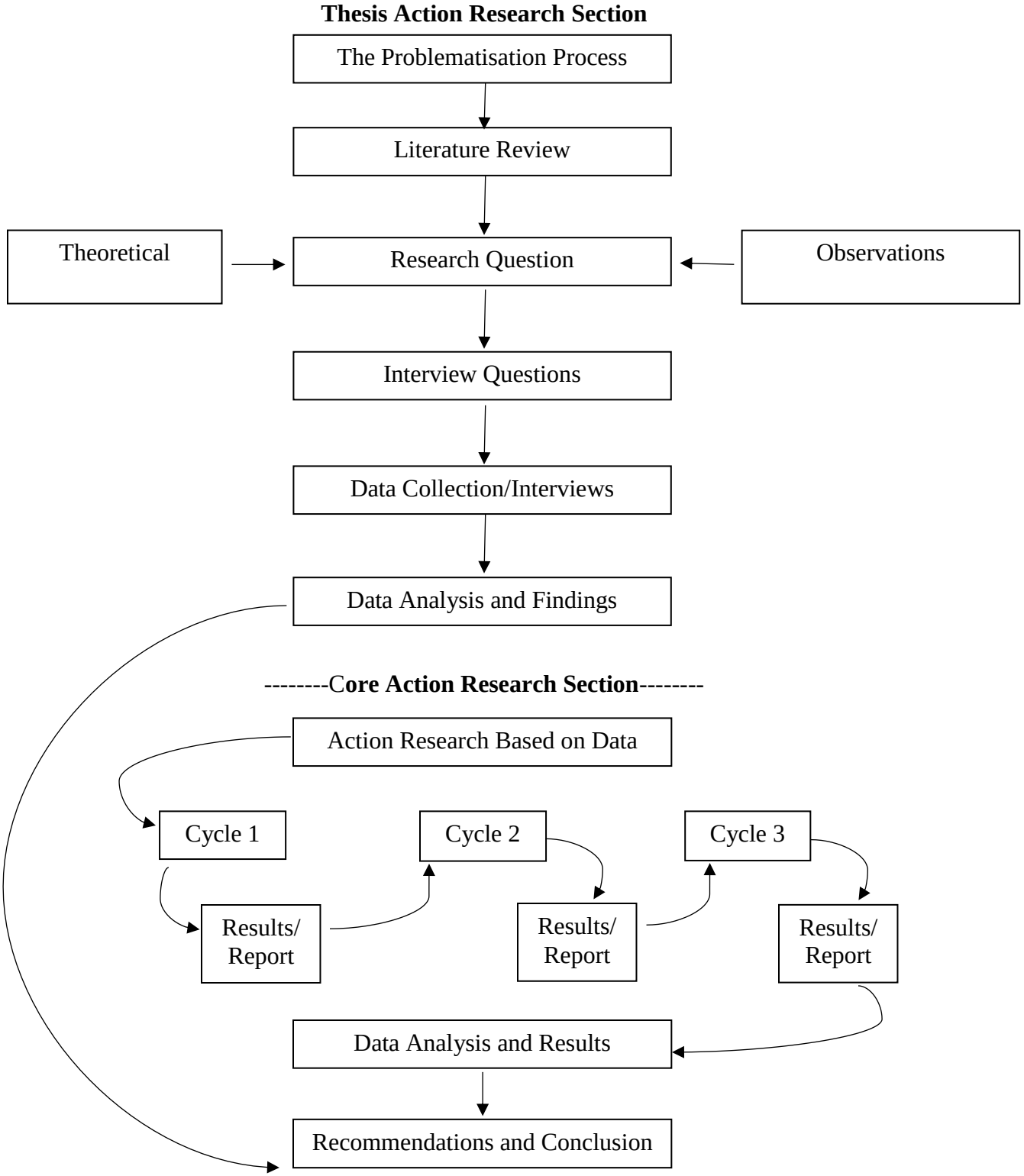
Appendix A

Research Design Concept Map



Appendix B

Participant Information Sheet

1. Engaging in Effective Communications in the Virtual Workplace: An Action Research Inquiry

2. Version #1 August 04, 2019

3. Invitation Paragraph

You are being invited to participate in a research study. Before you decide whether to participate, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and feel free to ask me if you would like more information or if there is anything that you do not understand. It is important for you to understand that you do not have to accept this invitation and should only agree to take part if you want to.

Thank you for reading this carefully and considering participating in the research study.

4. What is the purpose of the study?

The purpose of this study is to determine which methods of communication and their frequency are the best for achieving optimal workplace productivity in the virtual workplace. This study aims to understand how type and frequency of interaction in the virtual workplace impacts overall production. As the virtual workplace continues to be utilized, it is important for employees and organisations alike to understand how to best achieve employee efficiency and how that can be achieved and maintained. This not only has the potential to benefit the employees by improving employee production and retention in the long run but it also offers the possibility to improve employee satisfaction and aid in retention in the long run.

5. Why have I been chosen to take part?

You have been chosen to participate in this study because you fit one or more of the following qualifying descriptions; 1) you currently work in a virtual, 100% online workplace and/or 2) you are a senior member of an organisation which heavily engages its workforce in the virtual workplace. There will be approximately 15 virtual employees interviews.

6. Do I have to take part?

Participation in this study is voluntary and you are free to withdraw their participation at any time, without explanation, and without incurring a disadvantage.

7. What will happen if I take part?

As a voluntary participant in this study you will be asked to participate in interviews or participate in a variety of communication technologies if you are an employee in the virtual workplace as well as participate in a follow-up interview. The researchers in this study are Claes Belfrage, Principle Investigator and Nicole M. Adams, Student Investigator. Both the Principle Investigator and the Student Investigator are in affiliation with the University of Liverpool's Management School. Nicole M. Adams will be carrying out all of the virtual communications as well as all of the initial and follow-up interviews. Interviews will be approximately 30 minutes. Those participating in the virtual communications study will participate three types of communications in the virtual workplace, namely, a morning video greeting and intro to the workday followed by regular video communications as needed throughout the day, a chat at minimum 3 times throughout the day, and emails as needed. These will not be simultaneous, but rather will take place separately, each over a period of one week. For example, the video chat will be over a span of one week. Then, the chat sessions for one week. Finally, the emails as needed for one week. After this, a total of 6 weeks, interviews will be scheduled. The participants are responsible for participating in the 3 methods of communications over the 6 week period in addition to providing a follow-up interview concerning the various types of communication over the 6 week period. The follow-up interview should last approximately 30 minutes. It should be noted, no audio or video recordings of these events will take place. The purpose of the sessions is not to gauge the content of the communications, but rather if the communications provide more or less employee satisfaction in the increased frequency and various methods of communication in the virtual workplace.

8. How will my data be used?

> "*The University processes personal data as part of its research and teaching activities in accordance with the lawful basis of 'public task', and in accordance with the University's purpose of "advancing education, learning and research for the public benefit.*
>
> *Under UK data protection legislation, the University acts as the Data Controller for personal data collected as part of the University's research. The Principal Investigator / Supervisor] acts as the Data Processor for this study, and any queries relating to the handling of your personal data can be sent to Claes Belfrage, C.Belfrage@liverpool.ac.uk. Further information on how your data will be used can be found in the table below*".

How will my data be collected?	Interviews will be conducted via telephone. No audio recordings will be made and no identifying information will be collected. Rather, responses will be coded. In the case of senior interviewees, position (if not identifying and obvious) will be used. If the position is obvious and unique, a description of the interviewee's credentials will be used. For example, "According to a senior technical advisor…" OR "According to a senior executive expert in the field of online communications…"
How will my data be stored?	Hand written interview notes will be stored in a locked drawer by the researcher until the closing of the data collection date (Jan 31, 2020). After which, the data will be anonymised and transferred onto password protected files. Once anonymised, it will be transferred securely in accordance with the university's policies to the University of Liverpool's M Drive where it will be stored for 5 years.
How long will my data be stored for?	5 years
What measures are in place to protect the security and confidentiality of my data?	No demographic information will be collected. No identifying information will be attached to participant responses. Responses will be coded and once responses are transcribed, hand written notes will be destroyed. Prior to destruction, hand written notes will be locked in a drawer with the investigator having sole access. Computer files will be password protected.
Will my data be anonymised?	Yes, responses will be coded after transcribed. The handwritten notes will be destroyed once transcription takes place.
How will my data be used?	Data will be used to determine workplace satisfaction when implementing a variety of online communication technologies in the virtual workplace.
Who will have access to my data?	Once the data has been anonymised, it will be stored in the researcher's computer and in the University of Liverpool's M drive for 5 years.
Will my data be archived for use in other research projects in the future?	Yes. According to the University of Liverpool's guidelines, your anonymised responses will be available for 5 years.
How will my data be destroyed?	Hand written notes, once transcribed will be physically destroyed. After a period of 5

	years, computer files will be permanently deleted.

9. Expenses and / or payments

No reimbursements, benefits, or expenses will be incurred or made available for this participation in this study**.**

10. Are there any risks in taking part?

There are no legal, physical, economic or professional risks in taking part in this study. Refusing to take part or withdrawing from this study will in no way impact the relationship with the researcher and will garner no repercussions. Participation is voluntary and at the sole discretion of the participant. If a participant should experience any discomfort or disadvantage as part of the research that this should be made known to the researcher(s) immediately. Participants may withdraw at any time up to the end date of the data collection phase (March 31, 2020) after which, the data will be anonymised.

11. Are there any benefits in taking part?

Participants will have the opportunity to improve their virtual workplace communications by providing their input.

12. What will happen to the results of the study?

Once the study is complete, interested participants may obtain a copy of the results from the student investigator/data collector and researcher of the study. The study itself will not be published or part of the public domain. No participants will be identifiable from the results of the study (all responses will be anonymously represented in the study). Results will be made available after September 06, 2020 – the date of the completion of the research study. Contact information is provided on the Consent Form signed by the participant.

13. What will happen if I want to stop taking part?

Participants can withdraw their participation in the study at any time, without explanation. Participants have the right to request their results be destroyed to the time of anonymization. The closing of data collection will be on March 31, 2020. Participants may request up to that time that their data be removed from the study and destroyed. Furthermore, it should be noted that declining or discontinuing participation will not negatively impact the participant's relationship with the researcher and no repercussions will take place. Participation is completely voluntary. In order to withdraw from the study, participants can contact the Primary Investigator or the Student Investigator prior to March 31, 2020 using the information provided below.

14. What if I am unhappy or if there is a problem?

If you are unhappy, or if there is a problem, please feel free to let us know by contacting Claes Belfrage, C.Belfrage@liverpool.ac.uk and we will try to help. If you remain unhappy or have a complaint which you feel you cannot come to us with then you should contact the Research Ethics and Integrity Office at ethics@liv.ac.uk. When contacting the Research Ethics and Integrity Office, please provide details of the name or description of the study (so that it can be identified), the researcher(s) involved, and the details of the complaint you wish to make.

The University strives to maintain the highest standards of rigour in the processing of your data. However, if you have any concerns about the way in which the University processes your personal data, it is important that you are aware of your right to lodge a complaint with the Information Commissioner's Office by calling 0303 123 1113.

15. Who can I contact if I have further questions?

For further inquiries, please you may contact the Principle Investigator:

Claes Belfrage,
University of Liverpool
Management School
Liverpool L69 3BX,
United Kingdom
Email: C.Belfrage@liverpool.ac.uk

You may also contact the university's Research Participant Advocate in the USA 612-312-1210 or email address liverpoolethics@ohecampus.com

Appendix C

Participant Consent Form

Version number & date: Version #1 August 04, 2019
Research ethics approval number: TBD upon approval
Title of the research project: Engaging in Effective Communications in the Virtual Workplace: An Action Research Inquiry
Name of researcher(s): Principle Investigator, Claes Blefrage; Student Investigator, Nicole M. Adams

Please initial box

1. I confirm that I have read and have understood the information sheet dated August 04, 2019 for the above study, or it has been read to me. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐
2. I understand that taking part in the study involves being interviewed by phone and/or participating in a virtual workplace communication session. Interviews will be conducted on via telephone and will NOT be audio recorded. The researcher will take notes. Virtual workplace communication sessions will take place via chat and on the face to face platform Skype. The chatrooms used and the Skype sessions will NOT be recorded. ☐
3. I understand that my participation is voluntary and that I am free to stop taking part and can withdraw from the study at any time without giving any reason and without my rights being affected. In addition, I understand that I am free to decline to answer any particular question or questions. I do not waive any legal rights by participating. ☐
4. I understand that I can ask for access to the information I provide and I can request the destruction of that information if I wish at any time prior to January 31, 2020. I understand that following January 31, 2020 I will no longer be able to request access to or withdrawal of the information I provide due to anonymisation of the data at this time. ☐
5. I understand that the information I provide will be held securely and in line with data protection requirements at the University of Liverpool until it is fully anonymised and then deposited in the Archive for sharing and use by other authorised researchers to support other research in the future. ☐
6. I understand that signed consent forms and original notes will be retained in by the researcher, Nicole M. Adams, in her personal computer who is the sole person with access to said computer until 5 years from the close of this study, January 31, 2025. ☐
7. I agree to take part in the above study. ☐

_____	_____	_____
Participant name	Date	Signature

_____	_____	_____
Name of person taking consent	Date	Signature

Principal Investigator
Claes Belfrage
University of Liverpool, Liverpool L69 3BX, UK
+44 (0)151 794 2000
C.Belfrage@liverpool.ac.uk

Student Investigator
Nicole M. Adams
PO Box 634, Guanica PR 00653
(787) 322-7580
NicoleAdams@post.harvard.edu

Appendix D

Ethics Response Form and Approval

ETHICS RESPONSE FORM

PLEASE NOTE: Once approval is given if there are any subsequent modifications to the study once it is underway a further Ethics Response Form and re-approval is required

Researcher name (student): Nicole M. Adams	Faculty reviewer:	Date of Review:
Working Title of Proposal or summary of study scope: **Engaging in Effective Communications in the Virtual Workplace: An Action Research Inquiry**		
Proposal attached? _X_ Yes ___No	Academic Honesty Declaration signed? _X_ Yes ___ No	

Each of the ethical standards below must be adequately addressed by the researcher in order to obtain ethics approval.

In the blue column, the RESEARCHER (student) should perform a self-check using these 35 questions before submitting the ethics form to the faculty member supervising the study. In each row of the blue column, the RESEARCHER should enter YES, NO, or NA as well as a very brief explanation. The Academic Honesty Declaration must be attached and should be signed and dated.

In the yellow column the ETHICS REVIEWER (supervising faculty member) will enter YES, NO, or NA to confirm or challenge the RESEARCHER'S self-check on each standard. With each NO, the ETHICS REVIEWER will indicate what revisions are required for ethics approval. The faculty reviewer will also render a decision at the end of this form and return the form to the RESEARCHER.

If the ETHICS REVIEWER (supervising faculty member) is able to approve "as is" then the orange column is left blank.

In the orange column, the RESEARCHER (student) will respond to each of the ETHICS REVIEWER'S concerns to explain where/how each of the reviewer's concerns was met in the resubmitted materials.

	Researcher's ethics self-check In each row, the researcher should confirm compliance with the ethical standard by entering "Yes," "No," or "N/A," along with a brief defense of the response (i.e., stating keywords that point to how the ethical standard has been met).	**Ethics Reviewer's assessment:** After the researcher has presented the evidence for compliance with each ethical standard, the Ethics Reviewer should either confirm by entering "Yes" or challenge with "No." With each "No," the reviewer must specify what revisions are needed to obtain ethics approval.	**Researcher's response to Ethics Reviewer** Researcher must use this column to explain how and where each of the Ethics Reviewer's concerns (in the yellow column) has been addressed.
Example: Will data be stored securely?	***Yes. Data files will be kept on a password protected computer.***	***No. Please also address how the paper surveys will be secured prior to being entered as electronic files.***	***Paper surveys will be in a locked file cabinet. Proposal has been updated.***
The first 11 questions apply to all studies (even when the researcher is not interacting with participants to collect new data). **Hover the mouse over the blue footnoted words to view extra tips and definitions.**			
1. Are participant recruitment and data collection steps adequately described, such that the study's risks and burdens can be discerned?	Yes. Participants are assigned to my virtual group automatically. They may choose freely to participate (opt in). They will receive consent forms and study		

	descriptions via email 2 weeks prior to the study and the purpose and premise of the study are described on the PIS.		
2. Will the research procedures ensure privacy during data collection?	Yes. Interviews will not be recorded for added privacy and consent signatures (the only identifying data collected) will not be associated with responses (coded upon transcription also).		
3. Will data be stored securely with adequate provisions to maintain the confidentiality of the data?	Yes. Interview notes will be stored in a locked drawer with the investigator having the only key. The data will be transferred to computer and password protected. The Principle Supervisor will receive the data via email and store it according to UoL policies.		
4. Will the data be stored for at least 5 years?	Yes. Data will be stored for 5 years.		

5. If participants' names or contact info will be recorded in the research records, are they absolutely necessary?	Yes. Signatures will be obtained for interview consent, and thus names will be collected but results anonymized in the final data set.		
6. Do the research procedures and analysis/write-up plans include all possible measures to ensure that participant identities are not directly or indirectly disclosed? For secondary data analyses, the proposal must clearly state when/how de-identification will occur.	Yes. For those in the first interview set, only job titles (or if too identifying or rare) job functions or experience will be used (i.e. "According to the Chief technical specialist" OR "According to an experienced educational rater…" Only names will be collected due to signatures, otherwise demographic data is not relevant to the study and will not be used. No secondary data will be collected or used.		
7. Have all potential psychological, relationship, legal, economic/professional, physical, and other risks been	Yes. No legal, economic, or physical risks are present. Though possible, it is highly unlikely		

fully acknowledged and described?	that psychological or relationship risks are present as the participants are either my equals or above me in the organisation. I have no authority to harm their professional reputations, so this is not an issue.		
8. Have the above risks been minimized as much as possible?	Yes. Participants could opt in freely and withdraw from the study without repercussion and will be fully informed of the process.		
9. Has the researcher proactively managed any potential conflicts of interest? Note that student researchers may <u>not</u> utilise research assistants to recruit participants or collect research data on behalf of the researcher.	Yes. There are no conflicts of interests as I have nothing personal to gain by the results either way.		
10. Are the research risks and burdens reasonable, in	Yes. Risk is highly unlikely and the knowledge		

consideration of the new knowledge that this research design can offer?	potentially obtained can be very rewarding for the participants.		
11. Is the research site willing to provide an Authorisation Letter (or email) granting permission for all relevant data access, access to participants, facility use, and/or use of personnel time for research purposes?	Yes. An Authorisation Letter can be obtained.		
The remaining questions only apply to studies that involve recruiting participants to collect new data (such as surveys, interviews, observations). **_____Please place an X on this line if <u>NONE</u> of the questions in the next section are applicable to the proposed study.**			
12. Applicable for student researchers: Will this researcher be appropriately qualified and supervised in all data collection procedures?	Yes. The researcher is highly trained in qualitative and quantitative methods. No special groups will be interviewed and no sensitive materials will be discussed.		
13. Is participant recruitment coordinated in a manner that is non-coercive? Coercive elements include: leveraging an existing relationship to "encourage"	Yes. An email inviting the potential participants will be sent out along with the Consent for and information about the study. They will		

participation, recruiting in a group setting, extravagant compensation, recruiting individuals in a context of their treatment or evaluation, etc. A researcher must disclose here whether/how the researcher may already be known to the participants and explain how perceptions of coerced research participation will be minimized.	be made aware the study will be taking place and that it is completely an "opt in" option for them. Communicating with leadership is part of the task, so no work disruption will be occurring. Communications are at the discretion of leadership, so participants' work days will not be disrupted.		
14. If anyone would be excluded from participating, is their exclusion justified? Is their exclusion handled respectfully and without stigma?	N/A. No exclusions exist.		
15. Where the researcher proposes to use an interpreter, has adequate consideration been given to the interpreter's training regarding confidentiality and principles of informed consent, etc.?	N/A. The study is conducted in English with English language experts.		
16. Do the informed consent procedures provide adequate	Yes. The consent forms and study information will		

time to review the study information and ask questions before giving consent?	be sent out 2 weeks before the study is set to begin so that potential participants may inquire if need be.		
17. Will informed consent be appropriately documented?	Yes. Signatures will be collected.		
18. Is the participant information sheet (PIS) written using language that will be understandable to the potential participants?	Yes. All potential participants are English language experts and the information is in plain English.		
19. Does the PIS include an understandable explanation of the research purpose?	Yes. It is written and described in layman's terms.		
20. Does the PIS explain the sample's inclusion criteria in such a way that the participants can understand how/why THEY are being asked to participate?	Yes. They are informed that they are invited because they are in my virtual workplace group or that they are leadership/experts in online formats.		
21. Does the PIS clearly state that participation is voluntary?	Yes. They can "opt in".		
22. Does the PIS convey that the participant has the right to decline or discontinue participation at any time?	Yes. Participation is optional.		

23. Does the PIS include an understandable description of the data collection procedures?	Yes. Interviews will be conducted via telephone.		
24. Does the PIS include an estimate of the time commitment for participation?	Yes. Interviews will take no more than ½ an hour.		
25. Does the PIS describe any thank you gifts, compensation, or reimbursement to participants (for travel costs, etc.) or lack thereof?	Yes. There are no benefits or compensation being offered.		
26. Does the PIS include a description of reasonably foreseeable risks or discomforts?	Yes. If the participant does not wish to speak about their experience, they can opt out without repercussion in terms of relationship to the researcher. The relationship between the researcher and the potential participant will not be negatively impacted.		
27. Does the PIS include a description of anticipated benefits to participants and/or others?	Yes. Just the benefit of contributing to the betterment of communication practices		

	throughout the organisation.		
28. Does the PIS explain how the participant can contact the researcher and the university's Research Participant Advocate? (USA number 001-612-312-1210 or email address liverpoolethics@ohecampus.com)	Yes. The contact information is included at the bottom of the PIS.		
29. Does the PIS describe how privacy will be maintained?	Yes, information will be hand written, transcribed and coded so that names will not appear along with data once transferred and stored. No identifying demographics will be collected. No audio or video will be recorded. Hand written notes will be destroyed after anonymisation.		
30. Does the PIS disclose all potential conflicts of interest (specifying that this study is separate from the researcher's other professional role)?	Yes. The PIS explains that this study is not related to the researcher's professional role at the organisation.		

31. Do the consent documents preserve the participant's legal rights?	Yes. No legal waivers are included in the consent form. Participants are notified they do not waive their legal rights by participating.		
The remaining questions regarding sensitive content and vulnerable populations should be reviewed and addressed by the researcher (student) and faculty reviewer, but must also be confirmed by the International Online Research Ethics Committee before the study may go ahead. **__X__ Please place an X on this line if <u>NONE</u> of the questions in the next section are applicable to the proposed study.**			
32. If vulnerable individuals will be specifically sought out as participants, is such targeted recruitment justified by a research design that will specifically benefit that vulnerable group at large?			
33. If the researcher happens to also serve in a trusted or authoritative role to the participant (e.g., health care provider, teacher etc.), do the recruitment procedures ensure voluntary participation?			
34. If the research procedures might reveal or create an			

acute psychological state that necessitates referral, are there suitable procedures in place to manage this?			
35. If the research procedures might reveal criminal activity, child/elder abuse, or employer policy non-compliance that necessitates reporting, are there suitable procedures in place for managing this? Are limits to confidentiality (i.e., duty to report) appropriately mentioned in the Participant Information Sheet?			

ETHICS APPROVAL DECISION

THIS DOCUMENT MUST BE POSTED IN THE 'ETHICS' THREAD/FORUM IN THE STUDENT RESEARCHER'S CLASSROOM AFTER THE SUPERVISING FACULTY MEMBER HAS RENDERED A DECISION. THE APPROPRIATE ETHICS PATHWAY(S) MUST ALSO BE ENTERED INTO

THE MiTSA , eg EXPEDITED; EXPEDITED & LOCAL; IOREC AND IOREC & LOCAL APPROVAL(S); ALONG WITH THE TITLE OF THE DISSERTATION.

The supervising Faculty Member will mark an X next to box A, B, or C. If box A or B is marked, then the supervising faculty member will also mark an X next to the applicable subcategory (1, 2, 3, etc.):

	A. APPROVED VIA EXPEDITED (LIGHT TOUCH) ETHICS REVIEW: X • **As the supervising faculty member, I confirm that all applicable criteria 1-35 above are met with either a "Yes" or "N/A."** • **I understand my responsibilities as supervisor, and will ensure to the best of my abilities that the student investigator abides by the University's policy on Research Ethics at all times.** • **I affirm that the research activities fall entirely within the parameters of the design indicated with an X below (1, 2 or 3) that the International Online Research Ethics Committee has authorized faculty members to approve via the expedited (light touch) review:**	
		1. analysis of <u>public</u> documents, artifacts, behaviour or data;
		2. secondary analysis of <u>existing</u> data that is privately held but released for research purposes (with all identifiers removed);
		3. surveys or interviews of <u>non-vulnerable</u> adults on <u>non-sensitive</u> topics (i.e., no potential to participants of coercion, distress, loss of work/school time, damage to professional reputation). Vulnerable populations include children, clinic patients, prisoners, military personnel, facility residents, anyone over whom the researcher holds authority (e.g., students, subordinates), anyone who might feel undue pressure to participate in the study, and any individuals with severe enough mental disabilities to interfere with capacity to consent to the study. X
	B. REFERRED TO ETHICS COMMITTEE: • **As the supervising faculty member, I am referring this study to the full ethics committee (IOREC) because** [mark 1, 2, 3, 4 or Other below]. • **I will email the student's ethics application and all attachments as a single zip file to the ethics committee**	

		via liverpoolethics@ohecampus.com, copying the DOS (or Programme Director where this exists). The ethics committee accepts applications until 5 pm Liverpool timezone on the 3rd Thursday of every month. Decisions and feedback will be emailed to the student and DA within 5 business days after the 4th Thursday of the month.
		1. the researcher proposes to collect data from vulnerable individuals such as children, clinic patients, prisoners, military personnel, facility residents, anyone over whom the researcher holds authority (e.g., students, subordinates), anyone who might feel undue pressure to participate in the study, and any individuals with severe enough mental disabilities to interfere with capacity to consent to the study.
		2. some (potential) participants may find the research topic or premise sensitive
		3. participants' jobs or livelihoods may be placed at any risk by the study activities
		4. the participants' culture and/or international location suggest that extra participant protections may be necessary
		Other: _____
	C.	**REVISIONS REQUIRED:** **The student needs to revise the proposal and ethics materials to address the concerns in the yellow column and resubmit to me before I can select A or B above.**

Approval Letter

Dear Nicole Adams

I am pleased to inform you that the DBA Research Ethics Committee has approved your application for ethical approval for your study. Details and conditions of the approval can be found below:

Committee Name: DBA Ethics Committee

Title of Study: Engaging in Effective Communications in the Virtual Workplace: An Action Research Inquiry

Student Investigator: Nicole M Adams

School/Institute: School of Management

Date: 16 October 2019

The application was APPROVED subject to the following conditions:

1. The researchers must obtain ethical approval from a local research ethics committee if this is an international study

2. University of Liverpool approval is subject to compliance with all relevant national legislative requirements if this this is an international study.

3. All serious adverse events must be reported to the Sub-Committee within 24 hours of their occurrence, via the Research Integrity and Governance Officer (ethics@liv.ac.uk)

4. If it is proposed to make an amendment to the research, you should notify the Committee of the amendment.

This approval applies to the duration of the research. If it is proposed to extend the duration of the study as specified in the application form, the Committee should be notified.

Kind regards

Dr Ron Fisher

DBA Ethics Committee University of Liverpool On-line Programmes

Appendix E

Performance Data within Action Cycles

Participant	Production[1] Quantity AC1	Production[2] Quantity AC2	Production[3] Quantity AC3	Production[1] Quality AC1	Production[2] Quality AC2	Production[3] Quality AC3
P1	12	17	16	.02	.02	.01
P2	13	17	17	.01	.02	.02
P3	17	15	14	.01	.02	.01
P4	12	14	17	.01	.02	.01
P5	13	14	13	.02	.01	.02
P6	14	13	14	.02	.01	.02
P7	17	17	15	.03	.02	.01
P8	18	17	18	.02	.02	.01
P9	13	18	14	.01	.02	.01
P10	15	16	16	.01	.01	.02
P11	15	13	16	.01	.02	.01
P12	12	17	17	.01	.01	.01
P13	15	16	15	.02	.01	.02

1 Skype – Action Cycle 1
2 Email – Action Cycle 2
3 Chat – Action Cycle 3
Production Quantity is average per hour for the week (where 17 is the standard average)
Production Quality is compared with pre-scored, auto-generated essays for the week (percentage discrepant)
Action Cycle is 1 week in duration

Appendix F

Personal Journey and Observations

There are several personal notable mentions concerning the personal journey I have taken throughout this process. As with any lengthy milestone-based project, just as much can be said about the process and outcomes that can be said about the experience itself. With this being what I would consider the capstone of a long educational journey I began many years ago in the realm of higher education, indeed there is much to reflect upon. Many things can and did go wrong, or at least not as expected. As this degree takes quite a bit of time to complete, many candidates may face unexpected challenges along their own personal journey. For me, the challenges were relentless and gruelling. In the course of endeavouring to obtain this degree, I have been subject to 3 Presidential disasters (1 major hurricane, a major earthquake - both of which destroyed my homes, and now the pandemic which threatened to cut short my research timeframe as I barely was able to complete the required final task at hand). I had lost my mom who was my biggest supporter in this journey, and I had taken tremendous pay cuts and as a result, was forced to perform many professional manoeuvrings along the way. I am aware that many candidates with less challenging circumstances through their doctoral studies end up not completing this journey for one reason or another. Yet, after these great trials, I have faced, I stand here ready to hand in what is most likely my last work as a student. I am humbled and grateful for the opportunity to take this journey and share the fruits of it with you here through the completion of this project.

In terms of my education, I could have relied more heavily upon my academic advisor. He was perfectly matched for me and I enjoyed learning from him the many aspects of academia and doctoral studies in general that only come with a suitable and compatible supervisor. It was unfortunate due to the way the program unfolded, as a result of unavoidable time constraints and

not due to any fault of our own, that I did not have more time with him. I feel I could have had a much more enriching experience as an advisee.

I am very pleased that I took this journey. Again, having a very different background from many of my classmates, I was not sure what to expect. I was more than satisfied with the scholarship and support I received from the University, from scholars, administration and staff, and my colleagues.